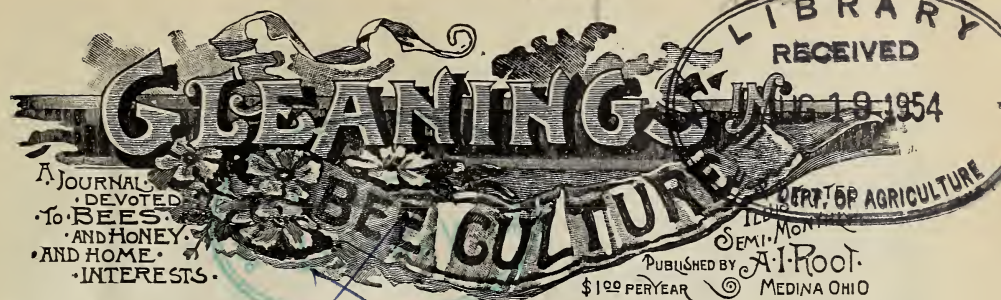


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Vol. XXII.

JAN. 1, 1894.

No. 1.

STRAY STRAWS

FROM DR. C. C. MILLER.

THE BEE-KEEPER needn't fear losing his job, however hard the times.

THE REVIEW is asking its readers how it can be improved. W. Z. is great on hard questions.

COUGH MEDICINE from Germany.—Plantain juice and honey, equal parts, gently boiled for half an hour.

MANY CONFECTIONERS use strained honey for the body of most of their candies.—*Carrie M. Ashton, in The Household.*

ISN'T AN ERROR involved in that "candied comb honey" item on page 920? Does greater evaporation ever predispose to candying?

IF HALF the good things that are said about the dead had been said while they were living, some of the dead might now be living.

EMMA WON'T TELL, friend Flansburgh (p. 921), how many sections her cases hold; but I'll whisper in your ear, that, when she scrapes 1500 cases a day, each case holds just one section.

I HAD A TOOL like that figured on page 920. After scraping with it for half a day, Emma went back to the case-knife—too slow work holding that notch in just the right place.

SALT, a teaspoonful to a gallon of sugar syrup, is recommended by C. H. Murray, in *Review*, as a catalytic agent, when feeding for winter. As bees seem to like salt, it may be a good thing.

SEALED COVERS, poor things, seem to be deserted by their best friends nowadays; but in *Review*, Arthur C. Miller says he succeeds with them every time. But he insists that conditions must be right.

THE LATEST PLAN for polishing sections is submitting them to friction by passing through the mails. Some mailed from Medina, when they got to Marengo were the smoothest sections I ever saw.

THAT BICYCLE STRAW made A. I. stiffen his spine, but it made E. R. "get his back up" more than ever. When I run I lean forward,

and when I ride a bicycle I expect sometimes to be in the shape of a C, sometimes of an I, and sometimes of an S.

THE OBSERVATION of Gerstung, that queens cease to lay for a few days each month, is not confirmed by other observers. Dadant thinks it can occur only in small hives where queens are crowded for room.

NEBRASKA has its State convention at York, the home of the *Nebraska Bee-keeper*, where there isn't a saloon in the county. The other York has plenty of saloons in easy reach, but he doesn't patronize them.

FOUL BROOD can not be originated from dead brood, says Mrs. Atchley, in *A. B. J.*, her own experience proving it as well as the fact that, before the introduction of foul brood, there was plenty of dead brood.

LINDEN SEEDS, according to an item in the *Rural New-Yorker*, are used in Germany for the manufacture of table-oils. If any one wants to start a manufactory of that kind at Marengo I'll furnish bees to fertilize the blossoms.

RAMBLER has discovered why the foliage of maple-trees turns red in autumn. He says, in *Review*, that they're blushing over the deception practiced by dishonest men in selling the stuff they do under the name "maple."

THIRTY-ONE out of eighty-three at the Chicago convention voted for prevention of swarming. That's a gain, isn't it? Twenty years ago prevention of increase was discussed, but I stood almost alone in favor of preventing swarming.

IN RUSSIA, according to Olga Levaschof, in *Revue*, bees winter well in open air in spite of the severe cold, when the harvest is good; but after a bad season losses are disastrous. The great requisite for successful wintering there seems to be good food.

SPREADING COMBS for winter has its advocates, but their number is decreasing. I think. In reply to a question in *A. B. J.*, 1 out of 22 would keep the frames the same, summer and winter, and only one of the other three actually practiced taking out a comb and spreading the others.

HASTY doesn't agree with Alley, that in second swarming there's no queen in the hive out of the cell "till the moment the swarm issues." In old times, piping was always heard the evening before a second swarm, and the piping queen was always out of the cell.

SCHENFELD, the eminent German, declares the poison-gland a vital organ, secreting formic acid from the blood, and that formic acid finds its way from the blood through the walls of the honey-sac into the honey. He says the sting has nothing to do with putting acid into honey.

THE "WORNOUTNESS" of the wintering problem may make it desirable to bury decently that venerable problem; but the wornoutness of some colonies, and the gone-ness of others every spring make an annual resurrection of the hoary problem not altogether undesirable.

CORNEIL AND SIMMINS, of Canada and England, are having a set-to in the *A. B. J.*, as to the spontaneous origin of foul brood, Simmins affirming, Corneil denying. Two good men. It will hardly turn out that a crop of any kind can be raised without seed from *some* source.

How CAN I please every one? I've written "Saint Joseph" to pacify Bro. Abbott, and now comes an Iowa man filling out the description of the "Saint"-ed city by calling it "a city where they licensed gambling on their fairgrounds and ran 26 gambling-tables," and had a saloon that ran 65 bar-keepers coatless and sweating, with people gathering 100 deep at the saloon between horse-races, which ran 7 in an afternoon, with pools sold on all the races, and *he* wants me to call it Holy Saint Joseph!

USING BEE-ESCAPES.

HOW TO PUT ON; HOW THEY SAVE LABOR AND ROBBERIES; AN EXCELLENT REPORT FOR BEE-ESCAPES.

In my work I have been testing escapes more and less, sometimes to the number of thirty or forty; and to say they are advantageous always would not be my belief, but yet I think them a decidedly useful implement. It is not the trouble of putting them on that is an objection, nor taking them off; in fact, if we work as fast as we can, the *time* amounts to nearly nothing. Sixty to one hundred per hour could be put on by a little practice. They can be put on at any time, but probably the best time is in the evening, and wheel the upper stories into the extracting-room the next morning, utilizing the cool of the evening and morning when it is pleasant and invigorating to work—while Mr. France is riding to and from the apiary—too late and too early to brush bees from combs. The only fault I could ever find with gardenening was that the mornings and evenings were too short.

It is impossible to go to the apiary, put on

the escapes, and extract the honey on the same day, because the bees will not be out until in the afternoon. Our present forms of escapes (I use the Porter) do not seem to work fast enough, but we may never get any that will do better than the present forms.

To put the escape-board under, the upper upper story does not need to be lifted off. Simply pry up the rear end of it about six inches with the left hand. A chisel may be necessary to start it. As soon as it starts, begin to blow in, across the brood-frames, smoke from the smoker held in the right hand, on the right side of the hive as you stand in the rear. Sharp blasts in the narrow crevice will pass clear across. Do not look to see if the bees run; if you have smoked bees a thousand times or more you may know that every bee will get out of the way as soon as possible. When the edge of the hive is up six inches, put your left knee against the edge, to hold it there while the hand goes over to catch the front hand-hole, and raise that end of the story about a foot, and swing it around to the left, using the knee for a pivot. By this time the right hand has set the smoker down and brought the escape-board up, and lays it on the top of the brood-chamber. Escape-boards are light. One hand can handle them by the rim and lay one down carefully to avoid killing bees. Then both hands are free to ease the upper story down on to it. This is only the fraction of a minute, but it takes as large a fraction to get to the next hive, and another to straighten the back after the bending position. Rheumatics straighten up very slowly sometimes. No pans of water are needed, nor honey-daubed brushes to stick to every bee they strike—no handkerchiefs to arrest the drops of perspiration that chase each other off the end of the nose into the hives, nor aching fingers from grasping slippery projecting arms while plying the brush.

Brushing bees hurriedly from the combs, with old Sol looking straight down at you in the confined air of a veil, is like feeding a thrashing-machine or firing an engine. The feeder steps out from his machine, the fireman from his cab, and apiarists seek the shade of a tree or building while they mop away the sweat and secure a free breath of cool air.

The principal fault I have found in escapes is, where only one upper story is used it keeps all the bees from work about six hours while they are getting through the escape, or else we need a six-hour supply of empty combs and stories to begin work with; but where two extracting-stories are used, one could always be left on. I used two stories, but expect, another season, to use three.

Brace-combs may trouble where narrower frame material than $1\frac{1}{2}$ is used in either top or bottom bars. Still again, there is about one colony in twenty that persists in their construction, and needs a change of queens.

When our harvest ended last June I did not think there would be any honey in the fall, and I left on about 75 upper stories full of capped sage honey, there not being a pound of winter stores in the lower hives. However, they gathered enough from tarweed and other bitter flowers to about half fill the lower combs. The escapes are put on in the afternoon, and the upper stories taken into the tent the next morning, and extracted during the day. The empty combs are returned to the hives the following evening, to be cleaned during the night; and now after five days there is only occasionally a stray robber smelling around. This could not be done without escapes, and I am so well pleased with the plan that I shall try to leave half the crop (if we have any—prospects look poor now) on another season, and extract it after the hot weather is over, and there are no ants to bother.

The honey is thick enough to be eaten with a fork, without any trouble, but the extractor must be turned like a thrashing-machine cylinder, which is easily done by putting a small cog-wheel on the crank end of the crank-shaft of a two-frame Novice machine. Then another larger cog-wheel, to which the crank is attached, is arranged on the side of the can just below the smaller wheel. It takes a little more turning, but the work is as easy as in hot weather.

C. W. DAYTON.

Pasadena, Cal., Dec. 15.

[This is one of the best reports, if not *the* best, we have received showing the value of the bee-escape as a labor-saver. We commend its careful reading to all of our subscribers.—ED.]

MATING OF QUEENS.

DOES EARLY SPRING MATING OR LATE FALL MATING HAVE ANY EFFECT UPON THE LONGEVITY AND FUTURE USEFULNESS OF QUEENS?

[In *Stray Straws* for Nov. 15, page 842, Dr. Miller referred to Guenther, a German authority, and editor of the *Centralblatt*, as saying that queens fertilized in the middle of May were not as prolific or long-lived as those fertilized so late that they did not lay until the next spring. Regarding this point, Dr. Miller has received a letter that goes to confirm Mr. Guenther's position. As the facts are too valuable to be confined to a private reader, the doctor sends the letter on, which we are very glad to reproduce.]

Dr. Miller:—Your item concerning Mr. Guenther's observations (p. 842) reminds me of a case I had some years ago. I had a valuable queen from which I wished to requeen as many of my colonies as possible; and, in my eagerness and

ignorance combined, I ran the business rather late in the fall. I had one fine virgin that I had about despaired of having fertilized before the weather should become too cool. But I had managed to provide the colony with plenty of choice drones; but for a full week after she should have been out, the weather was too cool. On the 18th of October it became warm, with but little wind. I closed them in early in the morning, and shaded them until the afternoon, when I loaded them on a spring wagon and took them over a mile from home to a hillside facing south. I then poured half a pint of warm honey over the frames. That set up a great commotion among the bees, and drones and queen were soon on the wing. In less than ten minutes I had the satisfaction of seeing my queen return with the mark of fertilization. She did not lay any eggs that fall. The following season she gave evidence of being a valuable queen. When she was two years old I traded her, with her colony, to a neighbor for some shoats. Two years later the purchaser sold out to go west, and I bought the hive and bees back. He stated that they had been bountiful honey-gatherers, but had never swarmed, which I doubted; but when I had taken her home I opened the hive and found the same old queen still there. There could be no mistake in the matter, as I had clipped both her wings rather close in the spring following her rearing, and the late owner had never handled the combs.

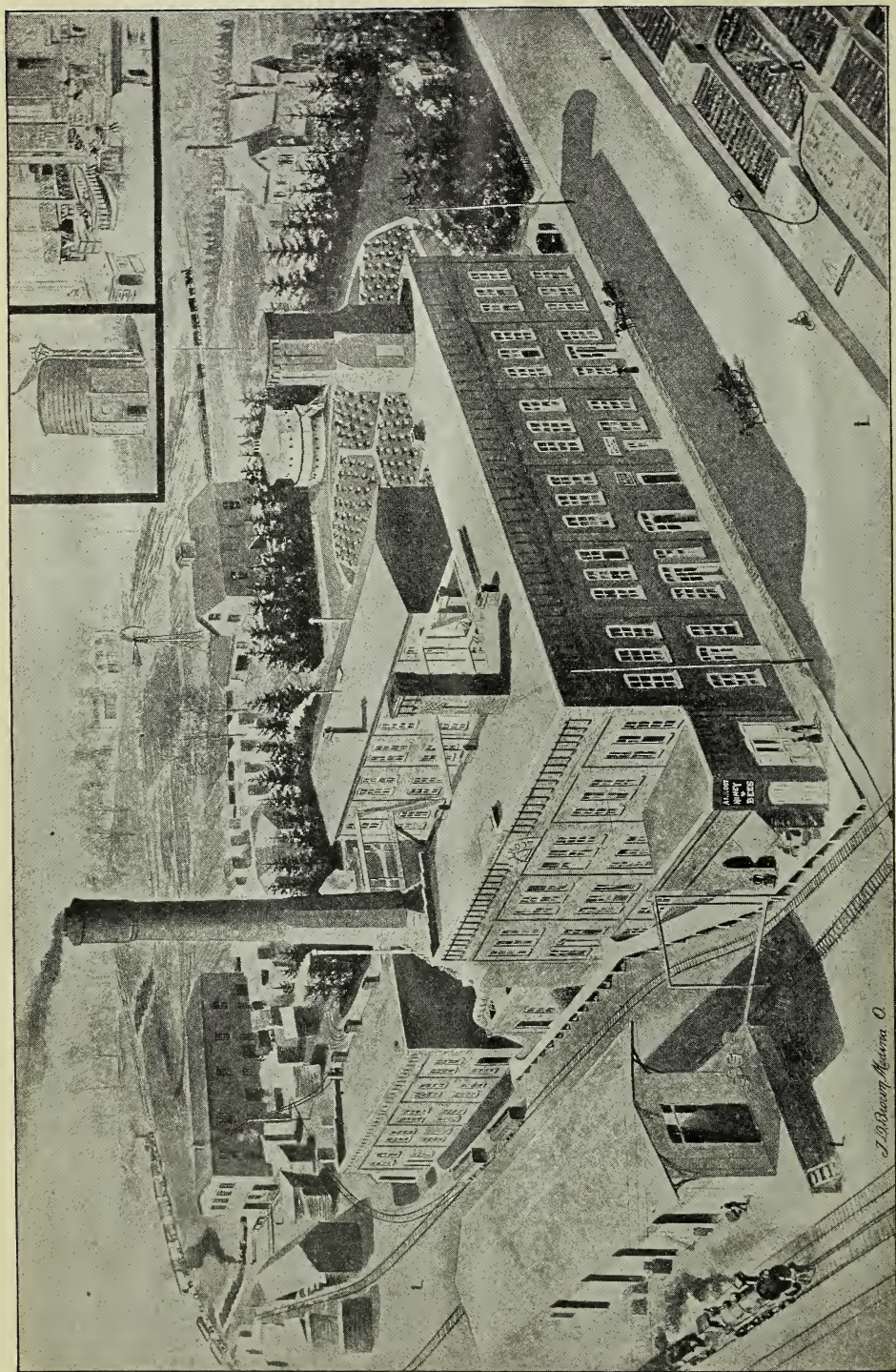
The first season after I bought her back was a poor one; but her colony was one of the best in the yard. The following spring, then in her sixth year, she was still there with a good colony of her progeny. Knowing her age I supposed she would not live until the season would fairly open; and being anxious to see how long she would live, I removed her in April to a hive having only about a pint of bees. A good season followed, and she built up a strong colony, and gave me 30 lbs. of surplus comb honey. She was superseded in September of that year, being a little over a month less than six years old.

Is it possible that her long idleness before the next laying season might account for superior quality and longevity? I am disposed to believe that Mr. Guenther has opened a question worthy of investigation.

G. B. REPLOGLE.

Centerville, Ia., Dec. 4.

[We should be glad to hear from others who have made observations along these lines. The theory put forth by Guenther, and confirmed by G. B. Replogle, looks reasonable. The average honey-producer usually finds it more practicable to raise queens after the honey-season; i. e., in late summer and early fall, when the change of queens will effect the least disturbance. That being the case, the advisability of late mating will dovetail very nicely with common practices.—ED.]



J. B. Brown, Master, O.

MANUM IN THE APIARY.

HOW HE RAISES QUEENS.

"Good-morning, Mr. Daggett. I hope you rested well last night."

"Yes, Mr. Manum, I rested very well indeed. I assure you that the pure air one finds among these green mountains is very invigorating as well as soothing to the nerves. Why, I have been here only two days, and I already feel much improved in vigor."

(Mr. E. R. Daggett, herein mentioned, is a retired bee-keeper from New York State.)

"Well, Mr. Daggett, I have come in to invite you to accompany me to one of my out-apiaries. This is the first day since your arrival that the weather has been suitable for one of your age to venture far from the house; but this is a beautiful warm June morning, and I think a six-mile drive may sharpen your appetite."

"Yes, Mr. Daggett, you will find it a beautiful drive, for Mr. Manum tells me he is going to the Meach yard to-day; and for fear you may feel the want of something to eat before you return, I have put up a lunch for both of you. When Mr. M. goes to his out-apiaries I never know at what hour to expect him back; hence I have learned to prepare a lunch for him, for he never would think of it. Why, Mr. Daggett, I have known that man to leave home immediately after breakfast, and not return until dark—these long days—and work all day on a light breakfast. I think it very imprudent in him; hence my watchfulness in providing a lunch," says Mrs. Manum.

ON THE WAY TO MEACH'S.

"Manum, what body of water is it I see at the foot of that mountain at our right?"

"That is Bristol Pond, and a very peculiar pond too. It is one mile long by half a mile wide; and, as the saying is, it has no bottom. It is really a mud pond, with only a few inches of water over the mud, yet there are a good many fish in it. This pond is fed wholly by springs issuing from the base of the mountain. There, you see that large white house on the hill yonder? That is where the Hon. H. B. Williams lives, and where I have an apiary."

"What in the world is going on here, Manum—limeworks?"

"No, this is the kaolinworks, where a large business is done. This kaolin is nothing more than white clay washed in water, and conducted in those long spouts you see laid in all directions. These spouts conduct the clay-water into large vats where it remains several days, the clay settling to the bottom, and then the water is run out of the vats, and the clay wheeled to these long dry-sheds and deposited on shelves to dry. When thoroughly dry it is put into barrels and shipped to market."

"For what purpose is it used?"

"Well, I can hardly tell you. It is said that much of it is used for sizing paper (wall-paper

especially), also for stuffing or filling prints, cotton cloth, etc. It is also believed by many that a large amount of it finds its way into confectioners' shops, also paints; in fact, it is doubtless used for adulterating many things."

"Do they get this clay near by?"

"Yes; that range of hills just in front of us is supposed to be nearly all composed of this clay. The best clay, however, is found from 50 to 100 feet below the surface."

"Well, here we are at Meach's. My! the bees are lively to-day."

"Well, I should think as much, Manum. What are they working on now?"

"Clover principally, though the raspberry bloom is not quite over yet; and I noticed, as we were coming, that quite a few bees were on the raspberries by the roadside."

"Have your bees done much on clover yet?"

"No. This is the first promising day of the season, and I feel very much encouraged. Here is a veil for you. You'd better wear it, as a person standing around looking on is much more apt to be stung than is the operator. There, now, I will first look for and remove queen-cells from those colonies from which I removed the queen the 17th inst., which was 8 days ago. Let me see. This is one of my choice breeding colonies, and I must handle the combs very carefully, so as not to jar and injure the queen-cells. My! just look at those nice cells on this comb—16 on this one comb, 8 of which will answer to save. Let me see—why, the record says this colony had cells ready to cap when the queen was removed. Whew! here is a young queen gnawing out, and I will let her run into one of my pocket-cages and introduce her into a colony in the home yard. There, you see, Mr. Daggett, I have 18 fine queen cells from this colony, which I will now put into my nursery-cages which I keep in an upper story placed over No. 12."

"Oh, my! Manum, is that the way you hatch queens? Why, when I kept bees we did not have all these new-fangled conveniences."

"There, Mr. D., just see these nice queens that have just hatched—12 in that nursery-frame, and here are 8 in this one; that makes 20 I have to introduce here to-day; and now that I have finished looking over those 20 colonies from which the queens were removed the 17th, I will remove and cage the last 16 yearling queens there are in this yard. I will get my box of mailing-cages and ask you to carry it for me. Where in the world is this queen? I must have overlooked her. Oh! here she is on the side of the hive. There, I guess 7 bees caged with her as companions are enough this warm weather. I will now make an entry of this in my queen-book, and also on this record-board kept in the hive, so that, if I should lose my book, I shall have something to refer to."

"I see, Manum, that you have cages here addressed to parties in New York, Iowa, Texas,

Florida, and here are two large ones to go to Australia. Is this an extra day with you, or do you have this to do every day?"

"Well, this is about an average day's work. I have but 18 queens to mail to-morrow. I have to cage them the day before, as a rule. I have mailed over 25 a number of days, and have mailed 45 two days, and one day 61. These were young queens, taken from my nuclei. That day was spent wholly working at the nuclei. It is now nearly 1 o'clock, and I think we'd better have our lunch. I will first go and feed the horse, and get some water."

"Your wife said she put in some coffee with the lunch."

"Oh what a thoughtful woman she is! That, however, is more especially for your use, as she knows I am not fond of cold coffee."

"Lunch over, I will now examine the sections to see if all is right. Here are two in this clamp from which the foundation has dropped down. I will stick it back in place by pressing the edge of the foundation on to the section with my knife, by heating the blade on the smoker. Here is a hive that must be out of level, because the bees are fastening the lower edge of the foundation in the sections to the separators. I will get the level and put this hive to rights at once. There, it was as I expected—quite a little out of level. Here is a colony, the bees of which have their sections nearly ready to cap, and I think I will tier them up. I would not do so for a day or two if I could be here at that time; but as I shall not be here for a week, I fear they may need more room before that time, if this pleasant weather continues. You can see, Mr. Daggett, I have to manage differently with out-apiaries that I visit only once a week than I would had I only one apiary. There, this part of the work is done, and I will now run in the 20 virgin queens we found hatched this morning. I will get the nursery-cages right out here, and we will commence at this corner of the yard. If you will hold this cage-frame for me I will make quick work of it. Let's see—it is 20 minutes of 5 o'clock. Now I will show you a fine trick. There, I take a nursery-cage containing a virgin queen, raise one corner of the enameled cloth so as to expose $1\frac{1}{2}$ inches of the $\frac{3}{4}$ space between sections. Now I place the cage over this opening, wire slide down, and draw the slide, and at once the queen goes down among the bees, where she is welcomed. Now I make a record of this introduction, and now we will go to the next queenless colony, and so on through. We have introduced the 20 queens in 19 minutes."

"Well, Manum, I am surprised at these new plans. You seem to have all the conveniences for doing the work among the bees that one could ask for; and now I do not wonder so much as I did that you can care for so many bees without help."

"Now, Mr. Daggett, my work in this yard is

done for to-day, and we will return home. To-morrow we will go to the Williams yard, where I am conducting some experiments in which you may be interested."

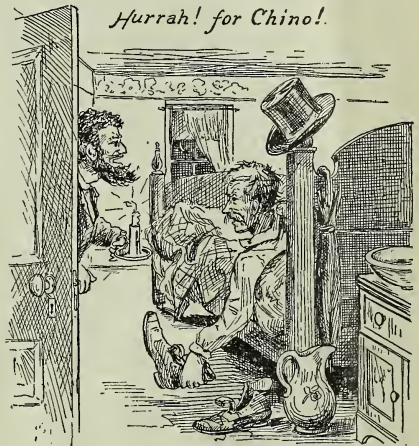
A. E. MANUM.

Bristol, Vt.

RAMBLE 99.

THE CHINO VALLEY BEET-SUGAR FACTORY.

It was quite early for the Rambler to get up; and, besides, there was a heavy fog that morning that added to the disagreeable features of early rising; but long before the break of day Mr. Clark gave the summons, "Hurrah for Chino!" and the summons had to be obeyed. I



had hardly become reconciled to the idea of having my peaceful morning dreams suddenly dispelled, when a few of the neighbors and their wives began to put in an appearance; and the burden of each man's remarks was, that his wife had not slept, nor had she allowed any one else in the house to sleep, since midnight. It seemed certain, that, if the wives could have had their way, they would have been in Chino by break of day, rousing people up at that place. "How far is it to Chino, any way?" remarked one of the party. The definite reply was given, that it was a right smart distance; another said that it was six looks and a half. That seemed a satisfactory answer, and we were soon taking our looks around the mountain; but inasmuch as the fog still interfered it took a great many looks to get even a short distance. By persistent inquiry, however, I found that it was about 20 miles, and our three loaded wagons made quite a procession as we proceeded on our way.

The first portion of our journey passed us to the rear of West Riverside, a thriving new colony, and where, during the past year, a thousand acres of white sage and other honey-producing plants have been plowed under, spoiling a large area of bee-pasturage. Work-

men with teams and scrapers were grading roads and boulevards for a new town site. Riverside is so justly famous for its oranges and its beauty generally, that, on three sides, it has a family of young Riversides—East, South, and West. The greater portion of our journey, however, lay through an unimproved and uninhabited country, now given over to the wandering sheep-rancher, but in time to be occupied by the water-ditch and the fruit-orchard. Several large areas here are plowed and sown to barley and wheat; and from the amount of volunteer grain that was making its appearance, there is an immense amount wasted during the harvest.

Mr. Clark, having the largest wagon and strongest team, carried all of the eatables for our expedition, which consisted mostly of pie. The country being monotonous and uninteresting, Mr. C. wished to stop and sample the various mixtures that were directly under his seat; but the wives of the whole party sat down, as it were, upon this proposition, and we had to proceed. Mr. C. looked wistfully down toward the bottom of the wagon, and evidently thought, "Oh! so near and yet so far."

The factory was in sight now, and we were

net which we noticed was spread with care in the bottom of the box, and the use of which we shall find out when we get to the factory.

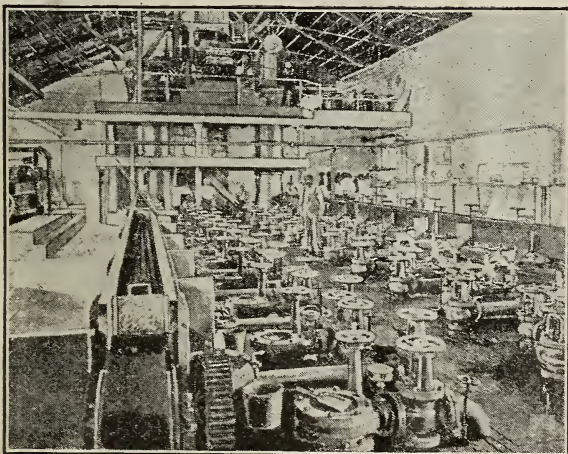
The first thing that struck us decidedly, and made us all exclaim something, as we drew near the factory, was a gorgeous odor emanating from an immense pile of refuse—souring beet-pulp. This was being fed to over 700 head of cattle, and also to several hundred sheep; and, notwithstanding the odor, they ate it with a relish. The great amount of pulp thrown out is not wholly consumed until several months after the factory has ceased running.

The object of our visit to the factory at this time was owing to the fact that Mr. Gird, the proprietor of the ranch, had decided to sell off a large number of lots at auction. Heretofore the land had, to a great extent, been let out on shares; but thinking that an ownership on the part of the tiller would result in the production of more and better beets, the sale was decided upon. When we arrived we found teams converging on Chino from all sections of the country; and, in addition to the teams, 11 carloads of people were on the ground; and, though hard times seems to be the general cry, there were 1500 people assembled, ostensibly to purchase land; and it seemed to be the well-grounded boast of Chino that there was no hard times in the sugar-beet district.

Ordinarily the factory is not open to visitors; but this being a gala day, the hundreds were allowed free access where could be witnessed the grinding up of beets at the rate of 100 tons a day. The run of the season had been 55,000 tons, making 15,000,000 lbs. of sugar. Every year the factory increases its tonnage, and it is proposed to use up 80,000 tons next year. At this time, load after load was being dumped in rapid succession into the long pits at the end of the factory; and here we saw the utility of those strong rope nets. The net was secured to the wagon on one side, and to a movable plank on the other.

The wagon was driven to the proper position, the plank was attached to a hook and sliding pulley, and a donkey engine sputtered away for a minute, lifting one side of the net, and the load went tumbling into the pit.

To follow the process of the manufacture of the beet into sugar, and describe the costly machinery, would take many pages; but suffice it to say, that in and around the factory there are 1000 people employed, and there is not a Chinaman in the crowd; and, furthermore, they know what to do with the boys in Chino. They put

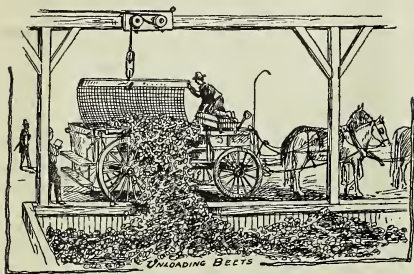


CHINO BEET-SUGAR WORKS.

approaching it from the back door, as it were, and through acres and acres of beets, some in the ground, some topped, some piled, and some in large wagons drawn by four horses on the way to the factory. When this factory was first started, the beets were all topped by hand; but Yankee genius developed a machine for topping them before they were out of the ground, and as fast as a horse can walk; then a light plow lifts them out. They are then thrown by hand into those large wagons. The wagon-boxes were provided with a strong rope

them into the factory to work, for there are but few idle hands around Chino.

The great land sale was conducted under a large canvas pavilion, and every thing was provided for the comfort of the visitors, even to a bountiful free lunch, which some of our party cleaved unto until the last morsel was gone. At one side of the pavilion was a large map of Chino, with the lots marked off and numbered. A very fluent gentleman made the statement that the profits upon an acre grown to beets



was all the way from \$68 to \$119. The benefits were, also, that the water was near the surface; that the town was healthful—very; that 34 babies had been born during the past month; but some one corrected him. It was 34 in a *year*. The idea that 34 were born in one *month*, in that small town, was putting the health at too high a rate, and would deter people from buying, evidently; 34 babies, however, meant that about three-fourths of a babe was born every week. Just think of it!

The venerable auctioneer commenced his work, and ten-acre lots were rapidly struck off, all the way from \$134 to \$205 per acre. A couple of men interested in the sale walked up and down through the audience, shouting, at the same time that the auctioneer got in his "will you give me a five, five, five?" "This is the bargain of your lifetime. This land is worth \$300. every dollar of it."

"Will you raise it a five, five, five?" said the auctioneer. "Profits," said the voice at the same time, "over \$100 an acre. A chance of your life, gentlemen." And the auctioneer went on with his "five, five, five." On the whole, the scene was quite lively, with a result of selling \$70,000 worth of land. And think ye, farmers of the East, who think your 100 acres a small farm, here in this land *ten* acres is enough in either fruits or beets.

This large industry has been built up largely through the fostering care that has been thrown around it by the two-cent bounty upon sugar. Should this bounty and the tariff both be taken off, this factory will be seriously crippled, and others that were going to be built soon here in Southern California will probably also get a setback.

And while considering the flourishing state

of the sugar business, under the bounty, I was forcibly reminded of the languishing condition of the honey industry. When this bounty was first proposed, the question was fully discussed as to the advisability of getting honey included. From my view, it would have been a good thing to secure a bounty on comb honey, and secure the production of that exclusively; and I begin to think that Mr. Harbison was right in holding the view that the production of so much extracted honey would prove a detriment to the honey industry; but now it is not so much the large production as it is the wholesale adulteration of it with glucose. It is evident, that, if the present conditions that menace extracted honey continue, it will be necessary to sell it at about two cents per pound, or near the price of glucose. While we have been busy getting our crop to market, we have heard but little about adulteration; but there are now mutterings in the air that may soon be heard, and that, too, I hope, with a salutary effect.

After the land sale, the visit to the factory, and the free lunch, etc., the wives hunted up their husbands, and, after a persistent effort, we succeeded in starting upon our homeward journey. That load of pie under the seat had not been touched, and Mr. C. had barely left the outskirts of the town before he wanted to stop and consume it; but the wives gave orders to proceed, which we did with evident reluctance. When we arrived in the outskirts of Ontario, however, five miles on our journey, Mr. C. pulled up peremptorily under some Monterey pines that lend a charm to Euclid Avenue; and seeing that there was no further use to expostulate, the wives also graciously descended from the wagons, and the pie-boxes were investigated. Suffice it to say, there were some terrible pie-dreams in the Clark mansion that night in consequence; otherwise the journey was pleasant and enjoyable, and the sugar industry gave us much to reflect upon for many days. That our industry of bee-keeping can not be conducted upon as large a scale is among the regrets of the

RAMBLER.

SHALLOW FRAMES.

HOW MR. NASH CAME TO USE THEM, AND WHY HE PREFERS THEM; MORE ABOUT THOSE PERPENDICULAR CONE ESCAPES AND THOSE YOUNG BEES THAT ARE LEFT BEHIND.

In a footnote on page 833, the editor wishes to know how the writer manages as regards the *young* bees that would be left in the cases of honey tiered up with cone escapes on top, stating that, in his experience, it was for the most part young bees that remained in the cases after the smoking and shaking of the same, and these would be lost on emerging from the cones into the air.

Well, friend Root, I had this same objection that you raise myself; but after careful observation, which included the trapping of a lot of the little fellows as they left the piles of cases, and dusting them with flour, and then noting the reception they received at the entrances of the various hives, I came to the conclusion that the percentage of loss was small, as most of the bees that could fly seemed to enter hives, and I believe that the loss is more than balanced by the economy of labor; and in this day of low prices and sharp competition we must cut all the corners we can.

As regards your other question, "Why do you prefer a shallow brood-chamber?" I will say that my brood-frame proper is a swinging frame, 12 x 12 inches—American; that several years ago I began using a *surplus* frame 6 x 12, with closed ends; and the more I use them the better I like them. They have been of special value in the poor seasons we have had late years, as bees will often fill a half-depth case when, had they been given a full set of brood-combs, they would store but little or perhaps *no* surplus. I will say, however, that I have used these cases as brood-chambers on a small scale, and I believe that a colony will winter better in two shallow cases than one deep one, as the horizontal division of the combs in the center gives them free access to all parts of the hive.

I am also strongly in favor of "handling hives more and frames less;" and, in the light of present experience, were I to dispose of my apiary and its fixtures, I should certainly adopt a shallow self-spacing frame of some kind. I could then have a large hive for extracted honey, a smaller one for comb honey, thus settling the contraction business—a deep hive for wintering and brood-rearing, and a small hive for the weak colonies in spring; and for migratory bee-keeping we need a fixed frame; and it is some satisfaction, when you put up a colony for shipment, to know that the correct spacing of the combs will be preserved, even if you did not secure every frame separately before you closed the hive.

Another thing, who has not noticed combs (in the center of the brood-nest perhaps), with brood on one side and part of the other, and the rest gnawed down nearly or quite to the septum?—cause—incorrect spacing. Tip up a few hives with loose frames, and see how the spacing is at the bottom. But, as a small volume could be written on this subject, I will close.

Monroe, Ia.

J. A. NASH.

[Friend Nash has given us just the information we called for. Now, while we make and sell principally the standard L. frame, and while it might be to our interest to keep down any discussion that would bring to light the advantages of a shallow-depth frame, we desire to have our brethren speak out. Tell us, just as friend Nash has done, why you like shallow-

depth frames, or why you do not like them, if you have tried them before.

Friend N. makes a strong point in favor of exact spacing—the facility of moving hives containing the frames with fixed distances. More and more the bee-keeping world is beginning to recognize this.—ED.]

APICULTURE IN CHILI.

HOW THEY MANAGE SOUTH OF THE EQUATOR.

Nearly six pages of that excellent French bee-journal, the *Revue Internationale*, are taken up with a letter from Alfred Dufey, giving an account of bee-keeping in Chili. He reports that only pure Italians are found in Chili, no bees having been in the country before their introduction in 1834. (Why isn't that a good place for a queen-breeder?) Forty years later, in 1874, 84,000 colonies were officially reported. Of course, that number has greatly increased in the last 19 years. Many wild colonies are in the forests, and some *haciendas* (plantations) have as many as 1500 colonies each. The hives in use are of various forms—a brood-chamber containing from 15 to 30 quarts, with one or two similar stories placed over for surplus. Honey-plants abound, especially in latitude 30 to 38. The climate is colder than the corresponding north latitude, but not so variable. In November and December, corresponding to May and June in north latitude, swarms are plentiful, and can be bought for half a dollar each or less.

Honey taken by the natives is not very appetizing. Combs, brood, and bees are all mashed in one mess that neither looks nor tastes well. Others more civilized drive out the bees, but mash or melt the combs.

Some years ago a bee-keeper from France undertook the business of raising honey, but was discouraged by the difficulties. Hives were very expensive, and could not be had well made, and two extractors made in Chili cost the fabulous price of \$50 each, and then he could get only about 2½ cents a pound for his honey. Prices are better now.

The harvest runs from the middle of December to the first of March, very rarely to the first of April, February being the best. An important item is, that foul brood and the bee-moth are unknown. The only trouble comes from moldiness of combs in the very damp winters, which is really the rainy season, for snow never falls in the plains, and the thermometer rarely descends as low as 4 or 5 degrees below the freezing-point.

The best source of honey in Mr. Dufey's region (southern) is the *utmo*, one of the largest trees of the forest, covered with white flowers from the last of January into March. *Laurestine*, a shrub, is also a fine yielder, blooming during winter, being quite hardy. Other parts

of Chili have other honey-plants, the flora being quite diversified.

Mr. Dufey commenced, a green hand, in 1888, with one colony, from which he obtained one swarm and 44 lbs. of honey. Since then he has allowed only a very moderate increase, his apiary now numbering only 30 colonies. Since the first year, his average yield per colony each year has been, respectively, 275, 103, 95, and 110 pounds, extracted. He gets 9 to 10 cents a pound, which is about double the average price of the average Chilian honey.

WEDDING-FLIGHTS.

In *Illustrierte Bienenzeitung* is given a very interesting table recording the excursions of a number of queens. In the opinion of the observer, K. Befort, there is always a preliminary flight merely to mark the location, and, in general, a plurality of after-flights—in one case at least ten excursions being made, fertilization occurring in no case till the third excursion or later. Time occupied in each excursion, from 10 to 35 minutes. Cowan reports a flight of 45 minutes.

One queen was fertilized on two different occasions. One queen flew when only two days old, one when 23. One queen was killed by the bees on her return, and Mr. Befort is of the opinion that such cases occur because of too small fly-holes. If there is a very small fly-hole it may be so filled with bees as to change its appearance so that the queen does not recognize it readily, and, in her doubt and vacillating movements, she arouses the suspicions of the guards, who seize her as an intruder. He recommends that the fly-hole be at least large enough for 8 or 10 bees to pass in and out comfortably at the same time.

HONEY VINEGAR.

An interesting communication from A. Prochaska appears in *Deutsche Imker aus Boheimen*. The writer manufactures honey vinegar and honey-vinegar essence in quantity, of such quality that it sells readily at a higher price than any other vinegar. The essence, as he calls it, is of such strength that the addition of nine parts of filtered soft water makes it vinegar of the best quality. This is convenient to ship long distances. He seems to have built up an important trade by keeping up his product to a high standard; and honey used to manufacture his product must come up to the following requirements:

1. The honey must be pure and transparent when in the liquid state.
2. The taste and smell must be good and pure, no matter whether the color be light or dark.
3. The consistence must be such that the honey shall be granulated solid throughout, or else in a thick fluid state. Thin honey, or that which yet contains a thin portion after granulation, is rejected.

Honey coming up to the required standard he receives from bee-keepers, paying .213 qts. vin-

egar essence for a pound of honey. As each quart of the essence makes 10 quarts of vinegar, it makes a little less than 2 pounds of honey for a gallon of vinegar.

It may be worth while to inquire whether if, in Germany, a market is thus opened for honey, the same thing may not be done here. Given the right man to establish a honey-vinegar factory, might he not make a good thing? The point is to make vinegar of such quality that it can have a sure market at a paying price. Each bee-keeper might do something on a small scale.

C. C. MILLER.

Marengo, Ill.

DOOLITTLE CELL-CUPS.

SOME OF THE ADVANTAGES OF USING.

There seems to be a good deal of interest manifested as to *what* is the best way to rear queen-cells. I have reared thousands of queens; have tried nearly all the plans known, but have found none as satisfactory and certain, and that gives as uniformly fine, large, and good queens, as using the Doolittle cups and having the cells built in the second story of *strong* colonies over queen-excluding metal. I find that cells built on Doolittle cups excel in strength. The thick base enables them to be taken off the sticks; are put into hives to hatch, and caged or handled in various ways more rapidly, and with less risk of injury to the inmates, than cells built in any other way. The uniform size and extra strength is a great advantage in caging cells when more than are needed are ready to hatch. These and other advantages more than offset the time required to make the cells. I have spoiled so many fine-looking cells built on combs, that were so frail I could not trim them to cage them, or that were ruined in cutting them out, and I have so little trouble with those built on "cups," that I use them nearly altogether. By watching the cells and culling out all that are not properly cared for, uniformly large fine queens may be secured. I "happen around" the day after giving cups and larvæ; and if any have not received proper attention they are destroyed; and I look after them again before the cells are sealed; and any inferior-looking cells are taken out, and the food used to start other cups.

I use cells from my best colonies when they swarm, but I do not see that they are a bit better than cells started from cups with larvæ from my best queens.

I suppose most bee-keepers have noticed that the first larvæ in a new swarm, during a good flow of honey, have a great abundance of food. Sometimes the larvæ in a colony are fed very scantily, and they seem to rest on the bottom of the cell instead of swimming in the food, as in the case of the new swarm. Larvæ from cells well supplied with food are not only more easi-

ly transferred, but I believe much better queens will be produced from them than from larvæ that barely have enough to eat, or may be half starved, for aught we know. Larvæ intended for queens should always be well fed; and, from the time the egg hatches, should have the most favorable surroundings possible, if the best queens are desired, and no haphazard way should be allowed.

This has been the poorest season for some years. Mangrove was a total failure, and the early crop was not an average one. We have had two gales this fall that stopped honey-gathering, and drowned out and destroyed a good many stands that were on the low lands. I believe one man, at least, lost all his colonies. I had 30 colonies near the river, and the water reached the combs of 9 nearly to the top of the lower story of part of them, but did not destroy any colonies. I had a few colonies blown over at my home yard; and as I was away and could not get back until the day after, they got to robbing; and as the honey-flow was entirely cut off, I let them alone.

J. B. CASE.

Port Orange, Fla., Dec. 11.

TREATMENT OF FOUL BROOD.

ROOT'S PLAN INDORSED; A SCHEME FOR PRE-SERVING DISEASE-AFFECTED COMBS WITHOUT DESTROYING THEM.

In GLEANINGS for July 1, page 539, we have a most excellent article on foul brood, from Bro. Root, which, if fully carried out, will surely eradicate the disease; but we think it a little too expensive, and by permission we will try to supplement said article. We know we are liable to draw fire from all sides, as Bro. Alley and others say cremation is the only remedy; but, in the language of Burns, "My learned sirs, ye's may be wrang."

The first thing I will notice is in the symptoms. While Bro. Root gives the symptoms perfectly, I will say, don't trust the nose on foul brood. That is where I made my mistake years ago. While the *educated* nose will readily detect the disease, any one not acquainted with foul brood would pass it by and wait for a *terribly bad smell* that never comes, and so lose his apiary before he finds out what the matter is.

Now, while we have tried the remedies recommended in the books and journals, such as salicylic acid, barite of soda, fumigation with various things, etc.; and while we don't condemn them we must say that we failed in every instance. We have long since decided that "doctoring" larval bees is out of our line of business. Mr. Root says the phenol treatment is perhaps as good as any; but when it is strong enough to kill the germs of the *bacillus alvei* it will kill the bees too. We suppose he means the larval bees. Certainly it will; but it will

save the comb, which is of more importance. Bro. Root speaks of phenol diluted 500 times. *It won't do.* We use it diluted only 50 times, and we don't trust the druggist to do the diluting either.

OUR PLAN.

After shaking your diseased colony off, and hiving the bees on comb foundation, as Mr. Root says, leave enough bees to care for the brood in the old hive, if it is worth caring for, until all the brood has hatched out—say 4 days; then make the second drive. The combs will then be mostly clear of brood; but keep the bees by themselves. *Don't* put them with any others unless it is with another just driven out, as they will carry the disease with them. Now for the combs.

Make a tank just large enough to take a comb and frame lying in the bottom, eight inches deep. Get a pound of pure phenol, or carbolic acid: have the druggist put it in solution with 2 oz. of glycerine. Make a bath of one part carbolic acid to fifty of water, or half a pound of carbolic acid to three gallons of water. Now take the combs, and, after extracting the honey, dip them in the bath, turning them so that you get both sides full. Put them in the extractor, and throw out the fluid, letting it run back into the tank. This fluid may then be put in jugs and sealed up for future use, as it holds its strength pretty well. Having made sure that every part of the frame is touched with the fluid, your combs are ready for use. If any of the combs have dead, rotten, or sealed brood, after dipping take a common bulb syringe and inject the fluid into the cells. It will surprise you to see how fast you can wash them out. Burn or boil all cloths; scald or burn out hives as directed by Mr. Root.

If your colony is not worth saving, don't try to burn it. Brimstone at night, when all are at home, if possible. Don't let a single bee get to you or away from you while working with foul brood, as that is the only way the disease is propagated.

If, after all, your bees take it again, they are either carrying it in from some other hive in your vicinity, or the queen is diseased, which, by the way, is a mooted question. But I have stopped it by simply killing the queen. Of course, I treated the partly drawn foundation as above. I have between 700 and 1000 combs in my home apiary, that have been so treated, that have never shown the disease since, and never will unless carried in by the bees. Use your combs for hiving new swarms, or for any other purpose. If the bees refuse to stay in, put an entrance-guard, such as is furnished by the Roots, on your hive. It will settle the question. Entrance-guards or queen-traps are a necessity. I give the preference to the entrance-guard, as it is more easily manipulated. But I use both.

Now for a few short rules.

1. Carbolic acid, or phenol, which means the

same, will kill all microbes if used in sufficient strength.

2. Allow no bees to get to or from you while working with foul brood.

3. If you destroy a colony, do it at night with brimstone. Kill them all.

If you follow the above you will beat the disease. Southern Illinois is full of it, and has been for ten years. We have treated it for that time with varying success, until we adopted the above treatment, which has proved successful.

Enfield, Ill., Dec. 15.

A. C. MITCHELL.

[Our correspondent evidently writes from experience, because his article shows that he has been "through the mill." We are not surprised that he should condemn all the various acid treatments, of the strength recommended. These "medicine cures" are proving everywhere to be no cure at all. While we know that phenol, or carbolic acid, reduced 500 times, as recommended by Cheshire, will not effect a cure—at least, failed to do so in our case and recorded reports we have read, we see no reason, however, why, when reduced only 50 times, it should not disinfect the combs. If combs were good, and well wired in good frames, it might be advisable to wash them in carbolic acid, as described, instead of burning. However, if we had only one or two colonies that were affected we should hesitate to try any thing else than burning.—Ed.]

THE OLDEST BEES IN THE WORLD.

HOW BEES HAVE BEEN PRESERVED SINCE THE TIME OF MOSES.

It is well known, that, in 1881, many royal mummies were found in Egypt—that is, the embalmed bodies of kings. For a good while after that, scholars observed that cartouches and rolls of papyrus were sold on the Egyptian market, bearing the names of kings. As to where the mummy diggers obtained these, our learned men at Cairo were at a loss to tell. The venders of these curiosities were sought for. It was soon evident that most of them came from three brothers who lived in Deir el-Bahari. These men were accordingly taken into custody. During a long examination none of them would reveal the secret. Neither threats nor promises were of any avail in making them set a price on it. The men had to be set free. Soon after that, one of the brothers came to an officer of the Egyptian museum of Boulaq, in Cairo, and said, "I am now ready to make a full exposition."

"And why now for the first time?" said the official.

"Because my brothers have robbed me of the profits of my share."

The betrayer then conducted Brugsch Bey (brother of the celebrated Egyptologist) to a pit 60 feet deep, and showed him a cavity where

there were several mummies of kings well preserved. For three days and three nights 300 men, under guard of soldiers, were employed in bringing the valuable find to the light of day. These mummies, photographs of which were taken, are in the new museum of Gizeh. It is related that the mummy of Pharaoh (he who oppressed the children of Israel), that it might not be destroyed on board the steamboat, was put on a little skiff in tow of the steamer. At the next railroad station the mummy was put on board of a first-class car, and thus the remains of Pharaoh were removed to his capital city some 3450 years after he had ceased to rule. In removing the folds of linen from about the body, several flowers were found that had been buried with him; and in a cup were found several mummified bees—the oldest in the world. The size of these bees is exactly that of Italians, with brighter yellow abdominal bands.

Medina, O.

KARL R. MATHEY.

JAKE SMITH'S LETTERS.

HOW TO KEEP HONEY FROM CANDYING; SOME GOOD INSTRUCTIONS.

*Mr. A. I. Gleanings:—dear Sir:—*Ime glad I made your acquaintances. Ive lurnt a heap from your paper and your book. The fixtyours I got from you was 1st class, and I feel now like I was comenst beekleepin on the right track. My bov Zed, too, he's taken to beekleepin wonderfull. I wish I cood a node as mutch when I was his age. He's rite smart.

About a mile and a $\frac{1}{2}$ from us is a nayber who keeps bees, which his name is Short—Jim Short. Only he aint like his name, he's rite tall. He doant beleive in the improved ways, and makes fun of what he calls my noo-fangled ways. But weer good friends, and he's so good harted I like to talk with him.

Last summer I found out they was a man only 8 miles from me which keeps bees clear up to the times. He farms it, but good years he claims he makes more on his bees than ennything on the farm. He is brother to the onnerable Jared Dinant which was in the state legislater. His 1st name is Henry. I met him at a quarterly meetin over to Stallstown, and when he found out I kep bees he ast me to cum and see him. I cum, and I had a reel good visit. He knows lots about bees, but he sez there's a heap more he doant know.

Weave had severl visits back and 4th, and he encurridges me that Ime doin rite well in the noo plans. He's took dinner evry time with us, and one day he sez while he was a eatin some hunny, sez he, "That's fine."

"Yes," sez I: "hev some more."

"Do," sez my wife. "Make yourself welcome," sez she. And she cut off a rite good hunk and put it onto his plate. If they's enny 1 thing more than anuther that pleezes my

wife, it's to see cumpenny like her vittles and eat harty.

"It seems to me," sez he, after he had eat some more of it, and looked like he was tastin it careful and studyin over it, "it seems to me," sez he, "that it's uncommon ripe for so early in the season. When did you take it off?" sez he.

"Let me see," sez I; "aint that some of the 1st was took last yeer, mother?" sez I.

"Yes," sez she, "that's some of the very 1st drawer was took," sez she. "It was so white and nice I've kep it kind a choice."

Then Mr. Dinant lookt surprised, and he sez, sez he, layin down his nife, sez he, "Do you mean to tell me that you've kep that hunny for mourn a yeer?"

"Why, sirten," sez I; "we always hev enuff to last from 1 yeer to anuther."

"Well, I declare!" sez he.

"Why, I thot evry buddy that kep bees hed hunny the yeer round," sez I.



Tell yer Jake! Them new fangled fixin's don't work thafaways. I don't beleive in 'em.

"That aint what I meen," sez he. "It's the condishen. Cobm hunny doant often keep like that over winter," sez he. "Now I wish yude tel me before we go enny farther whair you keep your hunny."

"Up in the garret, doant you, mother?" sez I.

"Yes," sez she, "up in the garret."

"What was the tempertoor up there?" sez he.

"Hot as blazes in summer," sez I, "and cold as Greenland in winter."

"And does it never candy in the winter, nor the cobm crack?" sez he.

"Not as I ever noticed," sez I.

"Yes," sez Zed, "when it's put there late in the season, without bein capped over, then it candies and cracks too."

Then Mr. Dinant began askin Zed questions, and it turned out that Zed had been studyin on

the things a good eel, and he give us his notion about it.

"It's this way," sez he. "You know if you cook sugar surrup, it makes different kinds of candy, accordin to how much you cook it, and it's a very different thing if you cook it a big lot. Well, it's a good bit the same way with hunny. When it first comes from the field it's thin stuff, and ittle sour and candy without half tryin. But after it's kep in the hive it gits cooked down and sealed up, and then it keeps. Hunny and neckter is two different things. Up in the garret it gits cooked still more, so it woont candy nor crack, no matter how cold it gits. The hive-cooked hunny is different from neckter, and the garret-cooked hunny is different still from the hive-cooked hunny."

"I declare!" sez Mr. Dinant. "I beleive you've about struck it, Zed. It is true, a sirten grade of heat makes a change in the caracter of sugar in solution, and why not in hunny? When sulphur is heated to a perticular degree, it changes and becomes like rubber, remaining so for months. My thought has always been that the only thing that heat did to hunny was to evaperate the moisture out of it, but accordin to Zed's philosophy it not only becomes thicker in the garret, but undergoes a real change. I see no reason why it may not be so changed that it can resist the effect of cold. I wonder," sez he, "if another result may not follow. I wonder, after it's garret-cooked, as Zed calls it, if it may not resist the action of moisture. You know if sugar is dissolved and then heated to a sirten point, it makes a candy that gits damp and melts in the open air, while granulated sugar from which it was made, lyin right beside it, stays dry. Perhaps cookin hunny to the right point makes it so it woont attract dampness from the air."

Now, Mr. Gleenings, if you tell the people to cook their hunny in the garret, it mite be a good thing. You mite make sumthing like a wax-extractor, only leave it a little open, sose the steam cood git out, and sose it woodent git too hot and spoil the hunny.

Zed's been a tryin to git me to lurn to spell, but it's up-hill buisness. So menny words is spellt all wrong. I doant see much sents to it.

JAKE SMITH.

CALIFORNIA ECHOES.

BY RAMBLER.

Hasty, in the *Review*, thinks that chestnuts are the main ingredients in the articles that treat upon wintering. Of course, we Californians will agree with him there, for we skip all of those articles. But say, Bro. Hasty, are there not chestnuts in a great many other articles? Is there not danger of their becoming *all* chestnuts? Then imagine what a wry face you will make in testing and condensing. Preserve your good looks, Bro. H., and quit in time.

Another bee-keeper shot! M. H. Mendleson, the great bee-man of Ventura, recently fell before the arrows of that little winged wretch named Cupid. Mrs. Ella Frear, of Denver, is the happy woman. Sorry to lose you from our bachelor ranks, friend M.; but what can not be helped must be endured.

What a sad thing it is to hear
Of great bee-men getting out of gear!—
Tangling themselves in apron-strings,
Bonnets, hairpins, fumery, and all such things!

That is a very good idea advanced by Mr. Alley about experiment stations. One station and one experimenter will hardly fill the bill. The great desire of us Americans is for controversy; and with several stations the doctors will be sure to disagree, then what lively times we shall have! Let's have more stations. We want one right off in California.

California bachelor bee-keepers owe a debt of thanks to Dr. Miller for that washing recipe on page 842 of GLEANINGS. The Rambler has pasted it in his hat, so to speak. Why! what's the use of having any women around when we can bake our own flapjacks and wash our own clothes? Take courage, Messieurs Bachelors. Dr. M. is on our side.

The Stinger seems to think that the Rambler is writing in a sensational vein. Well, I described that death of the bee-keeper Bohn just exactly as it happened, and did not throw in any of the wild incidentals that surrounded the inquest. If it was written in a sensational style it was done so unwittingly on my part, while, on the other hand, the Stinger *tries* hard to write something sensational and *can't*.

Button, the murderer of the said bee-keeper Bohn, has just had his trial, and the verdict of the jury was "manslaughter." The culprit gets seven years' imprisonment. Public opinion would have hanged him until he was dead.

Well, there! I was just going to mop my floor; but I won't do it now. It has not been mopped in two months, and then it was only scrubbed with an old broom. But see what Hasty calls a mop—a *Christian Dagon*—and fourth cousin to the devil (or saloon, which means the same). It makes my hair stand on end to think of what a narrow escape I have had. I will throw that old nasty *Dagon* away out into the bushes early in the morning. I think that other bee-men in California have caught on to this before, for I never see any Dagon around their shanties. Then just think of it—what a floor Hasty must tolerate!

Though we have not much wintering troubles here in California, I think much care should be exercised in putting the bees into proper shape for what little winter we do have. We have quite cool nights, if nothing more; and the practice of many bee-keepers in leaving the extracting supers on the hives, even when piled

three supers in height, is not a plan to be commended. A colony of bees will be stronger in the spring, as a general rule, and build up faster, if they have been confined to the brood-chamber and tucked up warm with a quilt. There's no harm in leaving the supers on, but see to it that the quilt confines the bees to the brood-chamber.

[Short paragraphs, giving little nuggets of information, are becoming more and more appreciated by the reading public. The reason of this is, that the pith is more easily assimilated by the mind, because it does not have to hold in logical array every point suggested in a regular article. You will see by the above that Rambler proposes to carry out this idea for the California bee-keeping interests.—Ed.]



HOW TO KNOW WHEN BEES ARE WINTERING WELL IN THE CELLAR.

Question.—I am a beginner in the matter of wintering bees in the cellar, and I wish you would tell me just how I may know when my bees are wintering well. By knowing the conditions of wintering well I can tell whether I am right or wrong as I have them.

Answer.—It will be very hard to tell all about this matter of the well wintering of bees, in the short space we feel at liberty to use here. Perhaps the best I can do is to tell just how I find my bees in the cellar this 14th day of December, as I have just come from the cellar, having just gone in with a view to answering this question, and having found the bees *wintering well*, according to my views in the matter. The bee-cellar is perfectly dark—so dark that it is impossible to discern even the faintest outline of a large piece of white paper carried in with me. The four doors have all been shut behind me, which lead into the cellar, one after the other as I went in, so that no disturbing ray of light or breath of cold air should arouse the bees in the least. Being in total darkness I stand still and listen, for in this listening we can tell more about how the bees are wintering than by any other one thing after we have struck a light. The sound I heard when listening is best described by the low murmur of a gentle breeze in the distant tree-tops, or, as I once wrote, a hum of content, with now and then, say once in 20 to 30 seconds, a faint "zeep, zeep," of a single bee, as we often hear in the summer time, only much more suppressed, while on an average of about once in every two minutes a single bee will fly out from some hive to the cellar-bottom, which is readily told by the sound of its wings. There are 60 colonies

in the cellar, and the above describes as best I can all that could be heard during ten minutes of standing perfectly still before striking a light. Where mice are present in a cellar, their presence is more quickly detected in this way than with a light, for they often make a clattering about the hives, easily heard in the deep darkness and stillness that reign. If you have only a few colonies of bees in your cellar you may be obliged to place the ear near the hives to hear their low hum, and stay an hour to hear a bee fly out; while if there are 200 colonies the hum will be louder, and bees fly out oftener. If the bees are in the house-cellar you must get up before the family in the morning, when all is still, in order to test this part of the matter. I next strike a match and light a spermaceti candle. With such a candle you can get a much more satisfactory result, without annoyance to the bees, than with a lantern or lamp; and as they can be obtained at any country store, I would advise their use in the bee-cellar. Having the light, I proceed carefully along the rows of hives, looking closely for any traces of mice; for, do the best I can, I have more or less trouble with these pests. The presence of mice is detected by finding heads and abdomens of bees, with the thorax gone or eaten up, and by fragments of comb under the hives. If these are found, set a trap for the mice—a common choker trap being as good as any; and for bait I find a squash or pumpkin seed ahead of any thing else.

Having the mouse question settled, I next look at the bees at the bottom of the combs. Where wintering well, only rows of abdomens will be seen, the points all standing outward, and nearly or quite motionless. Be careful not to breathe on the bees or hold the light too near, as they are easily aroused in this way. Few sights which I have ever seen give me so much real pleasure as to look on these hundreds of motionless abdomens of bees, especially where they come down evenly between the ranges of combs so as to make them appear like soldiers drawn up in column for battle. I sometimes raise the cover of a few of the hives and look in at the top of the frames; but as this can rarely be done without disturbing the bees, it is better not to do it.

Lastly, I look at the temperature, and I find it to-day to be 45°, which I consider just right, although, should it fall to 40°, the bees would show little if any difference, except that the murmur heard in the cellar would be louder. If warmer, the rows of abdomens would not be as compact, and they would be easily disturbed by the light. As it approaches spring, the hum of the bees will become louder, and the waste of bees flying out and dying on the cellar-bottom will be greater, even when wintering perfectly.

BEES ROARING.

Question.—Upon going into my bee-cellar to-

day I found one of the colonies roaring, or making more noise than all of the other forty-odd colonies put together. Indeed, this colony was roaring as bees do evenings during a heavy honey-flow. What caused this roaring? Is it a sign that this colony has the diarrhea?

Answer.—It may be well to keep watch of this colony a little; yet I suspect that, the next time you go into the cellar, you will find this colony as quiet as any; for, without more light on the subject, I should say that this colony was in the act of taking honey into the cluster. Where bees are wintered out of doors they generally "break cluster" with every warm spell which comes, and go over to the outside combs of sealed honey, uncup the same, and carry what they think they will need during the next cold spell over into the center of the combs they cluster upon. This, in a measure, insures their safety from starvation should the cold hold out longer than the sealed stores immediately above last, as they have this much in addition. In thus carrying honey, the whole colony is aroused, and a merry hum given off, the same as with colonies when being fed in the fall; for, so far as I have observed, bees never move honey from flowers, feeders, or the combs but that this hum of happiness is heard. Now and then a colony will carry honey into the cluster while in the cellar, doing this as often as the unsealed honey is consumed, which will cause the "roaring" spoken of; but the majority of colonies seem to think this unnecessary. If I am right in the above, and I think I am, the roaring would be no sign of diarrhea.

BEE-MOTH LARVÆ KILLED BY FROST.

Question.—I have a lot of combs which I have taken from the bees this fall, and I should like to insure their preservation from the bee-moth for a year or more. Will frost destroy the eggs and larvæ? If so, what temperature will it take to do it?

Answer.—Opinions differ about this, some asserting that a temperature of 25° above zero will destroy the eggs and larvæ of the bee-moth, while others think that a zero temperature will not kill the larvæ, but may destroy the vitality in the eggs. I once saw what I supposed to be a bee-moth larva crawling on the floor of my shop where I was warming some combs that had been exposed to a zero temperature, in order that I might straighten them, as I have given in an article on how to straighten combs. I would have taken my oath, after a careful examination, that said larva was my old acquaintance, seen in the hives in summer; but wishing to be sure, I sent it to Prof. Cook. He replied that it was the larva of the codling moth. From this I am inclined to think that those claiming that a zero temperature will not kill the bee-moth larvæ are mistaken, as I have never known my combs to be troubled afterward when exposed to a zero temperature.



W. E. D., of Va., wants to know whether the cover should be put on the hive again after putting the chaff cushion in. *Ans.*—Why, friend D., what reason should there be for leaving it off? Of course, you want to put it on, otherwise the cushion would become soaked from rains, and thus defeat the very object of the cushion—namely, making a non-conductor to the cold.

B., of Can., asks how long foundation may be kept. *Ans.*—The experiments conducted by R. L. Taylor, as recorded in our issue for Dec. 15, together with the noted observations of G. M. Doolittle in the previous number, go to show that old foundation is nearly if not quite as good as new. Foundation does become a little harder with age, but it may be softened by immersing it in water that feels hot to the hand.

R. A. McP., of Ill., wishes to move his bees a distance of 5 miles, and would like to do it during the winter months. *Ans.*—It is usually desirable to move bees in the spring, about the time they will begin to fly. But it can be done during mid-winter; but we would select a day when the sun is shining, when the temperature is above freezing, else the combs will be more liable to break, and disturbance to the bees be more serious.

W. E. F., of Va., would like to know how to prevent bees from mixing. *Ans.*—We do not understand exactly what is meant by this question. If W. E. F. means that he wants to know how to prevent queens from mating with inferior or other drones, we would say, put on drone-traps or entrance-guards to all entrances of hives containing undesirable drones. As to the mixing that takes place from entrance to entrance of hives that are situated close together—bees going from one hive to another—that will make no serious trouble.

H. C. M., of Ill., would like to know whether it makes any difference whether a honey-house be made of brick or not. *Ans.*—Brick would be considerably more expensive, and we doubt whether it would be as good. While brick dwellings do very nicely because artificial heat is used inside, they would be poor places for the storage of honey without that artificial heat. He asks further as to the advisability of putting honey into empty molasses barrels or kegs. *Ans.*—There would be no objection, providing such receptacles were washed out with hot water.

J. R. C., of Cal., wants to know how to get bees out of rocks. *Ans.*—If you want to have a little fun, blast the rocks; but perhaps you may then get neither bees nor honey in shape

to be of any service. We do not know how the bees can be gotten out except by trapping the bees out with a bee-escape. Keep the escape on for three weeks till every last bee has gone out. In the meantime put the first catch of bees in a hive on the outside, near the entrance of the rocks. After the bees have all hatched out, and gone from the cavity in the rock, we are of the opinion that, if the escape were removed, the bees now in the hive would rob the honey out of the rock, and put it into their new quarters. J. R. C. asks further whether turpentine or any other liquid of strong scent, if poured into the entrances, would probably drive the bees out. *Ans.*—We do not know. Possibly a weak solution of carbolic acid poured in might drive them out. Try it and report.

E. R., of W. Va., asks: "Can I use perforated zinc as a screen on the entrance of the hive during the swarming season, to prohibit swarming? If not, why not?" *Ans.*—Yes, you can, and to a certain extent it will check, or, rather, prevent, runaway swarms; but it is, to a greater or less extent, unsatisfactory. The bees must either be gratified in their natural desire for swarming or they will fritter away their time in making unsuccessful attempts in swarming out, trying to get the queen to go out with them; and their failure to thus accomplish their purpose will end up in their killing their queen: and in all probability the honey season will have gone by, and no honey will have been gathered. If you have an out-apiary, entrance-guards may very often be used to advantage; but we should prefer to use the Pratt automatic hives, as illustrated on page 125, last year.

D. G., of Neb., has quite a number of colonies that had foul brood last fall, and asks (1) whether the honey in the foul-broody hive would be fit to eat, without extracting and heating; and (2) whether, after boiling, it would do to feed to bees with safety; and (3) is there any way of disinfecting the hives so that they may be used with perfect safety? *Ans.*—(1) Such honey would taste all right; but we would not advise you to make any use of it, for bees will very often make their way into the house; and if one of them should happen to get a sip of this infected honey it would carry the disease to its colony, and thus spread it all over the apiary again. (2) Yes. (3) Hives may be cleansed by immersing in boiling water, as directed in the A B C you have. It is also possible that they may be disinfected by the use of carbolic acid reduced 50 times, the same painted on the inside and outside of the hive, as directed by a correspondent in this issue. That is the way we painted our house-apiary before putting any more bees in it.

P. W., of Pa., asks, "What is the best covering on top of the brood-frames for wintering colonies outdoors in double-walled hives?"

Ans.—We always make it a practice to remove the enamel cloth (if in a chaff hive) and put on top in its place a sheet of burlap. Any old carpet or old cloth that has not been waxed or smeared up with propolis would do just as well. On this put the chaff cushion, but be sure there is a passageway over the combs, under the burlap. We use Hill devices; but many others use, with equally good effect, sticks or corncobs across the frames. P. W. asks again, how it would work to place on top of a strong colony, in the spring, to get increase, another hive filled with foundation; after the queen was laying above, to lift the top hive off, and set it on the old stand, and take the old one and put it on a new stand a few feet away. *Ans.*—This would work all right *providing* your colony was extra strong. But usually, in the spring, such a plan would only be working mischief. You would have a lot of weak spindling colonies that would be practically good for nothing at the time of the honey-flow. It is better to secure all the increase possible inside of the original parent colony.



PROPORTION OF ACID TO WATER IN WAX-RENDERING.

Please tell me how much acid I need to use in cleaning 100 lbs. of cappings; also what kind of acid I need to call for.

DOUGLAS D. HAMMOND.

Malone, Ia., Nov. 13.

[For rendering cappings, no acid will be needed. Sulphuric (and that is the acid we use) is or should be used on dark or dirty wax. We do not use it stronger than about a quart of acid to a barrel of water. More often the solution is much weaker than this. Much depends upon the kind of wax to be worked.—Ed.]

NO SECOND SWARMS BY THE HEDDON PLAN.

We have 10 colonies of bees in the Langstroth hive, and we are never troubled with second swarms in this hive. I bought four colonies in box hives in the last three years. We let them swarm the second time, and then drummed them out. Three seconds out of the four came out the 15th day after the first swarm; one on the 12th day. I don't see why any person should have second swarms in the L. hive. We never cut queen-cells except for nuclei. We work the Heddon plan at swarming time. There is no danger of second swarms. We had one swarm make 300 lbs of extracted honey, and another make 125 lbs. of comb. The average of the others was 125 lbs. extracted.

JOHN F. BETTRIDGE.

St. Marys, Ont., Dec. 4.

ALSIKE CLOVER PROFITABLE FOR HAY AND CLOVER.

I can not think of doing without GLEANINGS. Through its instruction I was induced to sow alsike clover, which I have been doing for the last ten years, and find it a profitable farm crop for hay, pasturage, and especially for honey. We had 1500 lbs. of honey this year, and I am quite sure 1000 lbs. of that came from alsike. I was induced to have my "haystack" hulled this fall; and even if it was half timothy we got eleven bushels of very fine alsike clover seed. My neighbors have seen its utility, and the seed is nearly all sold at \$10.00 per bushel.

Joy, Ill., Nov. 28.

W. M. MILLER.

PUBLIC OPINION AND THE NON-SWARMERS.

How public opinion does change in regard to the swarming or non-swarming of bees for the best results in honey-gathering! If those who advocated swarming in a late issue of GLEANINGS had no better fall flow than I am expecting here every year, they would do their best to get what white honey they could, and then leave the dark for the winter stores. Ask those who cage their queens, and see what *they* say about more or less honey to the hive.

H. P. LANGDON.

East Constable, N. Y., Dec. 8.

[Yes, we should like to hear from the queen-cagers.—Ed.]

HOW QUEEN-CAGE CANDY IS AFFECTED BY CLIMATE IN AUSTRALIA.

I received two queens from Mr. Doolittle a few weeks ago, both dead, and had been for some weeks, I should say, by the appearance. The candy was so hard I could hardly stick a knife in it; but in a few days after, I was talking to a bee-keeper and I said the candy was too hard. I reached him the package down to look at, and the candy had become quite moist, and in grand condition for bees. Of course, it is the climate.

R. H. JERVIS.

Moss Vale, N. S. W., Australia, Oct. 30.

[This verifies the opinion we have expressed before; viz., that our present queen-cage candy is quite liable to be affected by the excessively hot (to our way of thinking) climate; and it is not possible, with the present method of making, to have the candy always just right when it reaches the hot climate. So far as we have tried, the Good (or Scholtz) candy is altogether the best.—Ed.]

OLD FOUNDATION AS GOOD AS NEW; THAT "LONG LEAN YANKEE."

Bro. Root:—Do you remember the second day of the convention, how that long lean Yankee (I do not remember his name) from Missouri, I believe, that argued against Bro. Taylor's fine-spinn theories? He was a comical genius; but I think that, if he were to look at the bee-business in the right light, he would see that even farmers, if they do not learn the nature and

ways of their bees, and how to handle them successfully, ought not to expect any profit from them.

I agree with Bro. Doolittle, in Dec. 1st GLEANINGS, that foundation is good for several years. I have some three years old, and do not see but it is as good as new. I do not allow it to freeze, for that cracks it; and then it is of no use.

I have read all the articles in GLEANINGS about sealed covers in wintering, and will say that, to my knowledge, there are no bees wintered in any other way, in this vicinity. I put my bees in the cellar and cover the sealed covers with old carpets, and they winter well generally.

SUPER LIFTER.

Columbus, Wis., Dec. 8.

YELLOW JASMINE, THE POISONOUS HONEY-PLANT.

The writer spent last winter in Florida, where the yellow jasmine blooms in great profusion in February. Notwithstanding this plant is said to be poisonous, the fragrance of its flower is not only delightful to mankind, but also very attractive to the bees, which work on it in great numbers. During last spring you had an article in GLEANINGS on the poisonous character of yellow-jasmine honey, which reminded me of the statement of an old gentleman living in Florida, one familiar with the plants since childhood, who said, "The honey made from the yellow jasmine is poisonous, and people who ate of it became temporarily blind; but they were soon relieved by drinking freely of sweet milk. Further, there need be no mistake made in the honey, as the bees do not cap poisonous honey."

M. ARTER.

Hoopeston, Ill., Nov. 30.

[We have never seen it stated before, that the bees would not cap poisonous honey. We have a good many subscribers in the locality of the yellow jasmine who can give us facts bearing on this point. How is it, friends?—ED.]

ESTIMATING THE PRODUCT OF COMB HONEY.

If there are many bee-keepers like myself, I am afraid the scheme of estimating the amount of comb honey produced, from the number of sections sold, will not give very accurate results unless a term of years is taken and an average found. I always believed in having plenty of sections on hand. Costly experience had shown me the wisdom of this. But we have had such poor honey seasons that I have not used as many sections as I expected, while the farmer bee-keepers, who used to buy a great many sections of me, have no bees now, and no use for sections. Accordingly I have a large stock of sections bought two and three years ago. Last year I bought more, and I do not expect to buy any next season. That's one comfort of these poor seasons. I'm not spending much money for bee-supplies nowadays.

NARROW BOTTOM-BARS.

In 1892 I made a number of frames for my shallow double-brood chamber hives, with the bottom-bars a little less than $\frac{3}{8}$ square, to see if this would cause the bees to fill the frames more perfectly with comb, instead of leaving a space next to the bottom-bar, as they generally do. They were a success for this; and if I used a brood-chamber of only one story I should consider the narrow bottom-bar a valuable improvement. When these frames are tiered up, though, the bees build comb around them, and between them and the frame below, so that they become a nuisance.

J. A. GREEN.

Dayton, LaSalle Co., Ill., Dec. 19.

[Your point is well taken, and we have therefore asked Dr. Miller to secure figures from manufacturers of sections, giving their average annual product made for the United States, covering a series of three or four years. We know ourselves, and think the other manufacturers will know pretty well what their annual product amounts to, *on the average*.—ED.]

TABLE SYRUP DIRECTLY FROM LOUISIANA SUGAR-CANE.

Mr. Root:—I ship you a half-gallon jug of Louisiana pure cane syrup. This syrup is made by boiling the juice of sugar-cane down to a density of 35 degrees, and it will keep in any climate for a year without turning sour or to sugar. It is unlike molasses, as there has been no sugar taken from it. It is an excellent bee-feed, and a fine table syrup, and generally used in the South in the place of New Orleans molasses, which has about all the sugar taken from it. Please test the sample on your table and as a bee-feed, and report upon it in GLEANINGS.

Should you wish to purchase any I should be pleased to fill any order you may give, from my syrup-house here, in half-barrels of about 26 gallons, or barrels of about 52 gallons, F. O. B. cars Illinois Central R. R., at 40 cts. per gallon—barrel included.

I am keeping a small stock of bees here, more for diversion than profit—having been one of the extensive bee-keepers at Munnsville, Madison Co., N. Y., with a stock of usually 200 colonies, running exclusively to extracted honey, previous to coming south five years ago.

The great drawback to successful bee-keeping in New York—the wintering problem—does not trouble us here. There is scarcely a day but bees fly.

F. D. WOOLVER.

Kentwood, La., Nov. 27.

[We can recommend the above syrup as being much superior, in our opinion, to the syrups usually found in our stores north. When I first tasted it, it occurred to me that we used to get molasses from the South, years ago, very much like it. Since the modern inventions, in the way of draining the molasses from the sugar,

and the more modern one still of making the greater part of it glucose, I have gradually come to have a dislike to any syrup except maple. This, however, is a good deal cheaper; and I should say, from the test we have made, it is just as wholesome. If this notice should give friend W. a trade in the syrup, I shall be glad of it.]



So the sun stood still in the midst of heaven, and hasted not to go down about a whole day.—JOSH. 10: 13.

JAKE SMITH will have something rich in our next issue. By the way, Jake has been posting himself up, and is about to assume the *role* of instructor.

OUR bees are wintering nicely so far—indeed, quite a little better than they were last winter at this time under sealed covers. They are now all under absorbents.

IN our last journal, page 940, we said Prof. Cook had been writing more articles on the subject of sugar honey for *apicultural* papers, when we meant to say *agricultural*.

WE are compelled to omit our last Book Review in this issue, as lack of time renders it impossible to get any proper idea of the eight or ten books remaining, in the short space allotted between the issues of our journal. It is the intention to give simply a general idea of each one.

WE saw an item lately, in one of the mechanical papers, to the effect that, for small powers, gas and gasoline engines were much more economical in cost of running than the steam-engine. For large powers, the case is reversed. Were it not for the fact that gas and gasoline engines cost two or three times as much as steam-engines of the same power, the bee-keeper who wants to run only one or two buzzsaws had better use the gas-engines. The time is coming when gas-engines will be made as cheaply as steam-engines, and then—good-by to the small steam powers.

ON another page we present to our readers a bird's-eye view of the Home of the Honeybees. It is generally pronounced, by every one here, to be an accurate picture. We especially desired our artist not to exaggerate any of our buildings; and while perspective may, perhaps, produce a slightly different impression, yet the view as a whole is wonderfully accurate. This picture is taken from a water-color painting that was on exhibition at the World's Fair, over our exhibit, and is now hung up in our office.

We are sorry we can not present to you the realistic, lifelike look of the original. It is, perhaps, unnecessary for us to go into details in regard to the different buildings; but should the reader desire some facts with reference to the growth of our business, he will find them on page 849, 1891.

It seems that the bees, away back so many thousand years ago, spoken of by Mr. Mathey in another column, must have been very nearly identical in appearance to the present Egyptian bees; if this is true, bees do not change their general appearance. Mr. Mathey saw the bees himself, while in Egypt. We might mention, further, that he is now and has been for a long time a contributor to some of the best bee-journals in Austria, in both the German and Hungarian languages. As yet he writes no English, so the translation of his manuscript has devolved upon W. P. R. so far.

A SHORT time ago one of the food-inspectors, after giving a long list of certain foods, including honey, that were adulterated with various compounds, ended up by saying that wheat flour was adulterated with potatoes. The proprietor of one of our milling establishments quickly took him to task by saying that, as long as wheat could be bought for 55 c. a bushel, it was altogether improbable that they would put in potatoes at 75 cts., or $1\frac{1}{2}$ times its cost, even if such adulteration were possible. Our food commissioners have been doing some good service, and, as a general thing, are not far from right; but they want to be careful and not make such stupid blunders as in the case of the wheat and potatoes. As long as it does not *pay* to adulterate, there will be no such thing as adulteration.

AMONG our old bee-books we find an edition of Huber included in the "Naturalist's Library," published by Henry G. Bohn, York St., Covent Garden, London (the publisher of Huish). The book contains 300 pages, and is beautifully illustrated with copperplate engravings in colors. We purchased this copy, with the other old bee-books which we have been reviewing, of W. P. Henderson, Murfreesboro, Tenn. The different bird and insect enemies of bees are shown in this volume true to life, both in outline and color, making it altogether the prettiest book we have yet reviewed. If any of the readers of GLEANINGS can find another copy like it, we should be glad to correspond with them. Sometimes books of this character can be found in second-hand bookstores, where the proprietor has no idea of their real value. This book was printed in 1852, and was edited by Sir Wm. Jardine, Baronet.

IN the last issue, Dr. Miller voted strongly for the footnotes. We suppose, if they have any thing of value in them it is because of the fact

that the editors have been in the homes of the most of the prominent bee-keepers of the land, and carefully inspected their methods. Besides their (the editors') experience in the apiary, they are supposed to read, and have read, almost every thing that comes to the office, on the subject of bees, besides reading once or twice the matter that goes into the journal. This gives them a pretty fair idea of what is practical, and what methods and plans have been suggested in the past, and whether these plans and methods have proven to be a success or failure. But we presume the principal feature of the footnotes that is most appreciated is the conversational feature, and that, if the ideas of a certain article are indorsed, it gives it strength and value. If not indorsed, it places a caution on it. However, we do not hold ourselves to be infallible, and are glad to be corrected, even if the correction does not come clothed in the smoothest language.

We doubt whether any living man is better informed in regard to every kind of hive now in use the world over, together with the many methods of handling bees in all lands, than is Mr. Karl R. Mathey, lately of Kesmark, Upper Hungary, but now of the Home of the Honeybees. With an amount of trouble and pains that seems absolutely astounding, Mr. Mathey has drawn off, in large blank books, a description of nearly all hives known, together with the minutest parts of all of them; and this description is accompanied with pen-drawings of the same, executed in the most beautiful and artistic manner. The books are written in the German language, and constitute a complete summing-up of practically every thing known in reference to hives of all kinds. The human figures represented in Mr. Mathey's drawings are quite laughable, and are of the same nature as the "Brownies" with which our readers are doubtless all familiar. It is Mr. Mathey's present intention to favor us with short articles from his pen during the year. To learn our language and our ways of doing business in this country, he has taken a position here in the same spirit that Peter the Great, of Russia, disguised himself and went to Holland to learn how to make ships for his own navy. His first contribution is in reference to finding some bees in the mummy of Pharaoh, the Egyptian king whose daughter found and adopted Moses. It will be found on page 18.

GLEANINGS, AND WHAT IT PROPOSES TO DO FOR BEGINNERS.

In this issue we begin, as will be noted, a new department by G. M. Doolittle. The more we have to do with bee-journalism, the more we are convinced that the needs of the beginner should be met more perfectly. Mr. Doolittle, from his long experience, close observation, and methodical habits, is eminently fitted to con-

duct a department of "Answers to Seasonable Questions," and, of course, these questions will come mainly from beginners. He is so well up in his profession that the advanced bee-keeper may read his answers with nearly as much profit as the beginner. Indeed, experts learn from each other, else a convention of experts would be without avail. The questions to be answered by Mr. Doolittle may be sent direct to him; but the sender must not expect a private answer, neither must he expect to see it answered immediately in GLEANINGS. Mr. D. will select the most important, and answer them when the *proper season* comes for such answer, even though it be six months or a year after. But there are beginners who want an answer to any and every question, no matter whether it be in season or not. Such questions as they often call for light on matters in our A B C of Bee Culture, should be sent to us, and will be answered either by private letter or under the heading of "Beginners' Question-box." This department, though newly named, will be the same in character as one that has appeared occasionally in our columns. What it will be for the future will be seen elsewhere in this issue.

QUIET ROBBING TO STOP ROBBING.

We notice that the idea of gentle robbing to stop objectionable robbing is credited to us; and we are told that it is now receiving a counterblast by friend Hasty, in the *Review*. We did not originate the idea, because, if the reader will refer to our back volumes of a number of years ago he will see that no less an authority than Dr. Miller probably first suggested it. At any rate, we found the plan to work so well in our apiary that of late we have been giving it considerable prominence. Quite a number, also, have indorsed the plan, while perhaps an equal number have said that it was a failure. Well, so far as we are concerned, so long as we secure more brood and more queens, and more queens fertilized, and at the same time secure almost entire immunity from *objectionable* robbing, we shall keep right on using the plan. It is our opinion, that those who have failed with it have not observed all the conditions necessary to make it work right. We do not blame some of our friends for thinking the plan will not work, for at first, apparently, it is a failure, because the bees make a perfect uproar to start with; but as soon as they learn that honey can be obtained only a little at a time, they quiet down. We remember we first said the Boardman solar wax-extractor would not work—that we had tried it, and could not understand why it should seem to work so successfully with Mr. B. when it should fail with us. We remember, also, that Doolittle cell-cups were also a failure; but lately, by observing a little more the conditions laid down, we not only made the cell-cups work successfully, but found the Boardman solar wax-extractor was one of the

best money-makers in the apiary. Bee-keepers who say that the special methods or plans of another careful and intelligent bee-keeper will not work should be careful themselves to observe the conditions; because, if Mr. A has found something that will save him a good many dollars in a season, Mr. B can not afford to declare it a failure just from a *partial* trial. The old saying, that "what man has done, man can do," is a proverb that sometimes means many dollars to the one who thoroughly believes it.

THE GIVEN PRESS.

In the December *Bee-keepers' Review*, Bro. Hutchinson has this to say of this excellent machine:

It is very pleasant to know that bright, practical men seem to have a way of getting at the truth of things pretty closely without recourse to such elaborate processes as appear in this month's report from the Michigan Experiment Apiary. Messrs. Heddon, Taylor, E. J. Oatman, Dr. Mason, and some others, have declared in favor not only of Given foundation, but of using quite heavy foundation of this make in sections. Their argument was, that the press put the wax in the walls of the foundation, leaving it soft, because it was not subjected to pressure, while the base was left very thin. In these experiments it will be seen that the lightest foundation, 13.75 to the foot, gives a septum 73.3 ten-thousandths of an inch, while Given foundation of 9.37 pounds to the foot shows a septum of only 63 ten-thousandths of an inch, the thinnest septum of any in the test. Not only this, but foundation from the press gave the best results in the weight of honey produced. Years ago, when foundation was discussed at conventions, the Given always came out ahead, and it has always been a puzzle to me why the manufacture of the press was dropped, and why manufacturers did not offer Given foundation for sale. The only reason that ever came to my mind was, that it seemed to me that it would be more work to make foundation on the press. I think now that, if the right man should take up the making of the press, or the making of foundation on the press, success would follow. There is one or two points that I do not understand clearly; and that is, why the press can make foundation with a thinner base, or, at least, make such a base that the bees leave it thinner, than can be done with rollers, and why the side walls are left softer than with a mill. The columns of the *Review* are open for discussion of this foundation question, and contributions on either or any side will be more than welcome.

For the past two or three months we have seriously contemplated the manufacture of these presses; and even before Bro. Hutchinson's editorial came out we had fully decided to do so; and since then we are "decideder" than ever. Of course, we shall keep right on making the roller foundation-mills. In two or three months we hope to have Given presses ready for market.

The special merit of the Given press, however, for the average bee-keeper, lies in the fact that any one can make foundation with these machines; while with the roller-mills, founda-

tion-making is almost a trade in itself. For the large manufacturer, the rolls will be much more rapid, and give a rather finer grade of foundation. We do not think the bees will *work* rolled foundation any better, but it *looks* nicer.

OUR NEW "MAKE-UP."

WELL, how do you like our new make-up? This is one of the changes that we had contemplated last fall, but thought we would say nothing about it until the time came. We think nearly every one of our subscribers will welcome the change. It is true, we lose about a fifth of the room that we had before when the type was not leaded. How are we going to make up for the difference? We are going to give you plainer print to read, more nearly after the style of the *Century*, *Scribner's*, *Cosmopolitan*, and other standard magazines. In the matter of journalism, the reading public care not so much for *quantity* as for *quality*. In other words, a subscriber will go to that journal whose editor will do the most editorial sifting, for him—that is, in a sense do much of the reading for him. Ideas on paper should be as "getatable" as possible. Fine type or close printing, no matter how excellent the subject-matter, nor how well worded, involves a certain amount of effort in extracting the idea. This effort produces a sort of friction, in a short time, that amounts to weariness. It is the editor's and publisher's business to save the reader as much work as possible. We believe that Bro. Hasty, a year or so ago, credited us with printing the greatest number of *words* of any of the bee-journals. That being the case, our readers can afford to have a slightly less amount of reading-matter, *provided* the difference is made up in quality. Our purpose is, and will be, to give both quality and quantity; that we have met the issue is evidenced by our big subscription list.

Last year, with our closely printed pages we rejected about half of the manuscripts that came to us; and not only that, we solicited many articles that we had to pay a considerable sum of money for—articles that we should not have received except by sending personal requests for them. This year the same plan is to be carried out as before, but "more so," as the boy said.

N. B.—All of A. I. R.'s matter will be set close—in type "unleaded," as before, because, he says, his matter was sifted down before as close as he could get it.

IMPORTANCE OF FULL ADDRESSES.

SOME two or three weeks ago we received, almost in the same mail, some two or three letters, in each of which the writer said he had written from two to three times to have his journal stopped, and still he could not prevent its coming. Of course, they each expressed themselves as very indignant, and we on our part were sur-

prised and chagrined, for we think there is nothing more aggravating than to have a paper *keep* coming when we have written two or three times to have it stopped. We know there are a number of second-rate publications that are guilty of this sort of thing; and, to add insult to injury, they will threaten to collect back pay by law. It is true, we run GLEANINGS a little while after the time paid for; but we never resort to *law* to collect, in such cases. We look at it in this way: If we send our journal after the time paid for, without distinct orders, we have no right to compel payment. The habit of people is such, however, that they will defer writing, even when they want the journal; and when a subscriber does not say that he wants the journal discontinued, we assume he wants it, and will pay for it soon. So far we have lost but very little in this way.

But how about those cases mentioned at the outset, wherein the writers had tried to have their journals discontinued? In one instance the man who ordered his journal stopped, returned a copy without another word; and as the wrapper was probably torn off before it reached the mailing-clerk, she could not tell whom it was from, nor what it meant. Again, he ordered the postmaster to write us; but our files show that his letter can not be found, and probably it was never received. He finally wrote himself, but in this case signed only his name, and, as most of our readers know, our list of subscribers is indexed by postoffices and States, and not by names of persons. Then all we could do was to wait for a complaint, and the last one contained the full address and name. In one other case the trouble lay in defective addresses. But, one other instance showed that the man had written the third time, each time with a plain and distinct address. This was clearly our fault, and we at once corrected the mistake, and credited our subscriber a year's subscription in advance, free of charge, and humbly begged his pardon. We mention all this to show that, while we do sometimes make mistakes, we are not *always* to blame even when appearances *seem* to indicate that we are downright dishonest in trying to push our goods where they are not wanted.

Moral.—Please be *careful*, and give your full address. Your mere name is not sufficient. We must have your *postoffice* and *State*.

THE NINTH ANNUAL REPORT OF THE NATIONAL BEE-KEEPERS' UNION

is at hand. The amendments to the constitution, proposed in the last report, were voted upon, and carried almost unanimously, says General-Manager Newman; and then he goes on to tell of the victory of the first battle of the year. In the Missouri senate a bill was introduced to the effect that no person should own or keep bees within the confines of any city, town, or village, nearer than 50 feet from the

line of any adjacent real-estate owner; and that a penalty of from ten to twenty dollars for each week should be attached after the notice to remove the bees had been served. "Mr. W. S. Dornblaser, ex-Secretary of the Missouri State Bee-keepers' Association, sent a copy of the bill to the manager of the Union, and instantly the Decision of the Supreme Court of Arkansas was brought into play like a Gatling gun, and copies of it were sent to the legislature and to the governor." Hon. R. L. Taylor, President of the Union, backed up the General Manager, and gave it as his opinion that the bill was unconstitutional. The result was, that the bill was promptly killed.

In regard to sugar honey, the General Manager gives notice that he will "prosecute to the full extent of the law any who may dare to offer for sale as honey any of that sugar-syrup swindle."

Mr. J. A. Pierce, of Grand Rapids, was threatened by 25 peach-growers, who stated that his bees were eating their peaches. Again the peach-growers were supplied with the Arkansas decision, that bees are not a nuisance *per se*; and upon finding the legal status of the thing they let the matter drop. Mr. G. B. Woodbury, of California, was also threatened by fruit-growers, and again the Arkansas gun was turned upon them, with the usual results.

There are several other cases on hand in Wisconsin, Iowa, Canada, Nebraska, and Colorado; but the Manager thinks it not wise to make any statement regarding them at present. The balance on hand in the treasury is \$721.71. If the Union assumes the aggressive in prosecuting honey-adulterators it will need every cent of this, and more. It has already, as we happen to know, taken several cases under advisement. The fact that the Union is watching them has made the law-breakers a little cautious. The dues for 1894 are \$1.00, and should be sent to Thos. G. Newman, 147 Southwestern Ave., Chicago. Any applicant may become a member by paying the same sum—\$1.00. We do not hesitate to say that the Union ought to be supported because of the valuable precedents it has been establishing, and the systematic way in which it turns them to good effect whenever the interests of bee-keepers are at stake.

The following is the law of Ohio concerning standard time. See Our Homes, this issue.

(House Bill No. 216.)

AN ACT

To establish a uniform system of keeping time throughout the State of Ohio.

SEC. 1. Be it enacted by the General Assembly of the State of Ohio, that the standard of time throughout this State shall be that of the ninetieth meridian of longitude west of Greenwich, by which all courts, banks, and public offices, and all legal or official proceedings, shall be hereafter regulated. Whenever, by the laws of this State, or by any law, rule, order, or process of any authority, created by or pursuant to the laws of this State, any act is required to be performed at or within any prescribed time, such act shall be performed according to the standard of time of the ninetieth meridian of longitude west from Greenwich, known as central standard time.

SEC. 2. This act shall take effect at 12 o'clock, noon, April 1, 1893.

LEWIS C. LAYLEN,

Speaker of the House of Rep's.

ANDREW L. HARRIS,

President of the Senate.

Passed Mar. 23, 1893.



The ox knoweth his owner, and the ass his master's crib; but Israel doth not know, my people doth not consider.—ISA. 1:3.

Very likely I shall be accused again of quoting texts that were intended to be used in a spiritual sense, and of applying them to practical every-day business matters, using them in a business sense, or, I should like to say, in a *common-sense* way. Perhaps some of you may ask how it comes that I, A. I. Root, possess more common sense than the rest of the world. Well, it may look that way to some of you, but I am going to appeal to your reason. If what I say is not true, will you be good enough to tell me wherein both truth and common sense are not on my side? May the great Father above give me grace and wisdom to present kindly and fairly—yes, even lovingly—what I have in mind.

The thing that disturbs me is simply this matter of keeping the time—of setting our clocks and watches. I presume there are few places where GLEANINGS goes, wherein this matter of local (or sun) time and standard time has not been discussed and compared. On the first of April last, the State of Ohio declared in favor of having one standard time—at least, to the extent of requiring all the public buildings to set their clocks by standard time and not by local time. I do not know how far this law has been complied with. I do know, however, that almost everybody seems to be fighting against it. A great and needed reform was suggested by our State; and I for one not only rejoiced, but really enjoyed having all the clocks in our factory and in our respective homes set to standard time. In our own home, I even objected to having *any* timepieces put back on the old-fashioned time.

Away back in the dark ages, people used to reckon time by the setting of the sun. I do not know but there are remnants of this old-time fashion existing even now, but we shall not need to stop to discuss it here. When people found out that the sun sets in the winter time (last night, Wednesday, Dec. 20, it set at 4:10 standard time) at 4 o'clock, say, and in the summer at 7—a difference of 3 hours, as civilization and business progressed they decided it would not do. Starting at sunrise would be just as bad, and accordingly somebody must have suggested midday and midnight. They would call the one noon. Then came the question, "What is noon?" They soon found that this was not a very easy matter to settle. Of course, sun-dials were better than nothing at all; but any old almanac—even a patent-medicine almanac—tells us the sun is half way over at noon only four times a year. There are a good many people who seem to be ignorant of this, although any watchmaker or jeweler, or any one who has to do with accurate time, can tell you at once. The day before Christmas, the sun is half way over exactly at noon; while Nov. 1 it is *16 minutes* out of the way. If you had your clock set exactly right with the sun on the above day, it would be more than a quarter of an hour away from noon. Well, by Sept. 1 the sun is exactly right—no minutes fast and no minutes slow. By going back to Aug. 1st, however, we find it six minutes over on the other side from what it was on Christmas. By the middle of June it is right again. Going back to April 1 we find the sun 14 minutes slow. Now, add this 14 minutes slow to the 16 minutes fast which we had just before

Christmas, and we have just half an hour's variation. What do you think of *sun* time, any way?

All this is owing to the fact that the earth moves much faster in its orbit around the sun from July 1 to Jan. 1; but just while you are reading this the earth will be leaving the sun, and will go slower and slower till July 1, and then it will "slide down hill" again, as the boys might say. The orbit of the earth is not round, but like a hoop slightly flattened; and this, of course, causes the earth to move two miles a second *faster* at Christmas than it does on the 4th of July. Now, all those who talk about sun time, and the "time that God gave," as some have fondly expressed it, fail to take this matter into consideration.* The sun is really no guide at all for *accurate* time-keeping. It would hardly do, in fact, to tell by it a man of regular habits when it is dinner-time. If he lived out on an island, as did Robinson Crusoe, he might have his dinner when the shadow pointed to noon; but if anybody else lived on his island, and they two were working together, they would be liable to lose from 15 minutes to half an hour—that is, if one had a tolerable clock and the other went by sun time. This state of affairs did not make very much trouble while people were mostly farmers. When, however, "in the course of human events," it became necessary to run factories, and have gangs of men congregate together, some absolute method of keeping time was really a necessity, and each factory had its clock. To keep this clock right, some sort of sun-dial, with the aforesaid medicine almanac to tell when the sun was fast or slow, did very well. When people traveled by stage-coach, the difference in time in different towns and cities did not create very much disturbance; but with the advent of railroads—especially those running east and west, as the main lines do—and the greater speed that came in with these new methods of travel, something "had to be did." Unless the railroads had some sort of agreed standard time, they would be liable to prosecution for endangering human life.

Previous to 1883 they had a system of keeping time that came up under the force of circumstances. At the time, nobody seemed to have the matter much under consideration, and it was a sort of make-shift. If I remember correctly, we had New York time, Chicago time, and San Francisco time. Then it became necessary to have the time change from one kind of time to another kind of time at some special point. Travelers, in passing this point, were notified to change their watches so many hours and so many minutes. This was rickety and loose; but it was better than no system at all. In 1883, by general consent there was an agreement to have all changes of exactly one hour.

*As an evidence of the futility of attempting to fix the hour of noon by the sun, please notice that, during these short wintry days, the sun sets earliest at some point during the first week in December. Now, if the sun were at all regular or accurate in his habits, he ought, in fairness, to *rise* latest at about the same time. Instead of this, however, he keeps rising later and later through the month of December, thus throwing the noon-mark to the east, or making the sun slow; and it is not until about the first week in January that he gets to his limit as a tardy riser, and commences getting up earlier. You can verify this by your clock or almanac, or both. With such a state of affairs, pray tell me where noon *ought* to be; in other words, the old-fashioned noon, or 12 o'clock, according to sun time, is constantly changing; and if noon time is constantly changing, so, of course, are all the other hours in the day, and the old-fashioned sun time really amounts to nothing at all. We might almost as well regulate our time by the moon, as did the Indians when America was discovered by Columbus.

Travelers were to set their watches forward or backward exactly an hour after passing certain points. As one thinks of it, he wonders how the world got along without having some regular system like this years before they did. I believe it was expected that the great world of people—especially intelligent, educated American people—would fall in with this reasonable scheme of having something fixed and definite in regard to the matter of time. Like other improvements, however—in fact, according to the language of our text—Uncle Sam was obliged to acknowledge, "My people doth not consider." A great many did not understand; and those who did, in a heedless, thoughtless way, "kicked," if I may use the American expression, against the innovation. Of course, there were certain points where railroad time agreed with the time already in vogue, or within a very few minutes; and in such places there was no trouble. Here in Medina we happened to be at a point where there would be about 28 minutes' difference between standard time and the time we had been accustomed to; but the truth of the matter is, the most of us had not been accustomed to *any* particular time. The clocks in our homes varied from a few minutes to half an hour—sometimes a whole hour. When somebody out in the country, however, had reason to think that his clock was a whole hour out of the way, he shoved it back to about where some neighbor guessed it *ought* to be. Watchmakers and jewelers did a little in trying to straighten things up; but many of them, in smaller towns, were as stupid as the people in the country. I was in that business for a good many years, and I know something about it. Rival jewelers would have their clocks as much as 10 minutes apart; and I thought sometimes they stuck to it just to spite each other.

Who can tell the time that has been wasted—yes, *valuable* time wasted—by the resulting want of harmony in meeting appointments? Let me give you a few items from experience that meet me right along. Two of our men agreed to get up in the nighttime to make some important changes that could not be made while the machinery was running. One had his clock set by sun time, and the other had standard time; so a valuable man stood out in the cold, waiting for the door to open. I do not know whether he charged me for that half-hour or not; but I presume it was all right if he did so. The man who drives our big team was going out into the basswood orchard to get some timber. Three men were to go with him. He told them to be on hand at a certain corner, at such an hour in the morning. A part of them had sun time, and the others had standard. The team and expensive men (worth a dollar an hour at least) had to wait for the men who had the other kind of time. A father and mother, with a family of little children, came down to the depot one Saturday morning, just 15 minutes after the train had left. They could have reached home by night, had not the clock been sun time where they stopped over night. I heard them discussing about going to a hotel to stay all day Saturday and all day Sunday. They were poor people, and, besides being needed at home, they could very ill afford the expense of two days at a hotel with their children. They started for the train so as to be 15 minutes ahead; and I do think it would have taught the man or woman who kept sun time a useful lesson to make them pay for all this expense and trouble, because they stubbornly refused to set their clock correctly, according to the best light of reason and common sense at the present time.

There is no need of multiplying these in-

stances. You have all seen it. When I was having my teeth fixed, the dentist told me to come at half-past one. Well, even as bright a man as he is had his clock set by sun time. His time, in the middle of these short winter days, is worth a dollar an hour or more; but he might have lost half a dollar by having his time set according to his own notion rather than according to the dictates of business and sense. If it had been the other way, I should have lost *my* time.

You know how I have taken the part of railroads—that is, I have in many cases; and some of the friends have stopped taking our journal because, they said, I sided in with the "monopolists." I think it was only yesterday, or the day before, that I overheard a grown-up man say something like this:

"Let the railroads have such time as they choose; but what business have they to interfere with the time *we* keep? All in the world they do it for is just to be arbitrary, and show their authority. They are getting the upper hand of us every day, and bossing in this, that, and the other. Now they are undertaking to tell us how we shall set our clocks in our own homes."

Such speeches as the above bring to my mind vividly our text. Why, the ox in his stable should have more sense, for he knows his owner, and knows where his interests lie. The prophet, however, adds, in a kindly way, "But Israel doth not know, my people doth not consider."

Again, we hear the expression over and over, "God's time is good enough for anybody;"* and, "Give us the good old-fashioned time of our fathers." Well, there may be some sense in wanting the good old-fashioned time; but is sun time any more God's time than standard time? If God is supposed to use sense and reason, the latter would certainly be the time he would recommend. It is about 25,000 miles around the earth. The sun goes around it in 24 hours—or, at least, it seems to. Just 20 miles east of us we find the large city of Akron. The difference in sun time—that is, if there were such a thing as accurate sun time—would be about 1 minute and 20 seconds. Now, would anybody be so stupid as to declare that Akron should have one time and Medina another, and that the railroads should change their time to agree with every station? A minute and 20 seconds would not make very much difference; but in some kinds of business, where the proprietors have learned the value of even minutes, it might make a great deal of trouble. The city of Oberlin, about 25 miles west of us, had a fearful railroad collision that resulted just from the lack of *one minute* to get out of the way. Their regulations were figured down so exact that a difference of one minute in the watches of the railroad officials brought disaster. Of course, even railroad companies do not, as a general thing, work on such close margins; but in this case a combination of circumstances made a minute of exceeding importance. The railroad companies have decided to make the time one hour earlier after running westward a little over 1000 miles. I think no one

* When I hear people saying that this, that, and the other is good enough the way God gave it to us, I feel like saying to such people, "Look here, my friend, why do you wear spectacles? Are not the eyes that God gave you good enough? Why do you fuss or bother with these things that are only inventions of man?" The truth is, God gave us a little, expecting us, by our God-given intellect, reason, and common sense, to hunt up and find out things ever so much better; and the time has gone by when any reasonable being can object to progress and short cuts because God did not furnish it without any effort on our part.

questions the fairness or the good judgment used in fixing it thus. But yet the greater part of the world seems to be determined to go back to old methods, resulting in loss, disappointment, destruction of property, waste of money, etc. If we had the money that might be saved by adopting standard time all over the United States, there would be ample means to clothe and feed all who are just now suffering in this country. There is not a question about it.

In the town of Interlochen, Grand Traverse Co., Mich., they keep *four* kinds of time—at least they did two years ago this fall when I stopped there. I had to wait about two hours for a train, and told them I should like dinner about noon. The landlady at the hotel asked what kind of time. I then asked what time they usually had their dinner. She replied that they had to get one dinner for the railroad men and another for the townspeople, and the two kinds of time were just one hour apart. She said they had quarreled over it, but neither side would give up; and then some other people, who moved into their new settlement from somewhere else, insisted on having their time, such as they had where they used to live; therefore there were four kinds of time in that town. If I were in a new town where no better harmony could be brought about than the above, I think I would move away and let them suffer the consequences of their folly until they learned wisdom.

Our schools and churches here in Medina are all run by standard time. In fact, as yet they have not dared to do otherwise. Now, just imagine having a different kind of time in your homes, and teaching the children, as they grow up, to figure and calculate, and blunder and stumble continually by having school time and home time half an hour apart. Why, the Humane Society ought to take the matter in hand under the plea that it is cruelty to animals.

Yes, there *are* some arguments on the other side. Perhaps you would be ashamed to mention them after what I have said, and therefore I will mention them for you. It is a bother to have dinnertime before noon. Well, here at our place we have dinner at 11:30, so our dinner-hour is just what it always was. But the women-folks complain that it is no end of trouble to become accustomed to having dinner at 11:30 instead of 12.*

Yes, it is some trouble to have a new set of teeth until one becomes accustomed to them; but for that reason shall I have mine pulled off and thrown away after they cost a big lot of money, simply because I can not be patient and wait a week or a month until I get used to them? (I wish to say, however, that, even though I have not had mine two weeks, I would not take ever so much more than they cost to go back to my old ones.) Then there is another objection—one still more serious in its consequences. The mothers declare that the children will insist on having the extra half-hour before going to bed. With the old-fashioned time they used to go to bed at half-past 8 or 9. With standard time they keep insisting that it is not 9 o'clock yet, etc.; and it is a good deal of trouble to keep quoting all the while the old order of things. Yes, it makes me some trouble. I have said a great many times, "Look here, children, it is half-past 9, and you know that means, by the old-fashioned time, 10 o'clock. Here you are, all of you, still up. Now just think what a time we shall have in the morn-

ing in getting you up so as to be ready at Bible-reading and prayers." The latter always comes after breakfast. When the children are late they are obliged to get their breakfast afterward; and if mother does not carry it back and put it in the oven, it is likely to be cold.

But, dear me! what are such trifling things as these, compared with having *one* kind of time, and *one* only, the world over? Somebody may say, "Why, if you think a little you can figure out the difference." Well, I have had my teamster stand still with his team while he and I both figured out when he must be on hand to meet an appointment, with his clock set on the old-fashioned plan. It puzzles me, and uses up my brain force, and even then I get it wrong. The dentist and I both tried to figure when I should be at his office according to his clock. I did not make it out, even then, but perhaps he did. When I remonstrated with him he said the great city of Cleveland, after trying standard time, had voted to go back to sun time. What shall I do with such an argument right before me? Why, I would say to the great city of Cleveland, "For shame!" I do think they *ought* to be ashamed of themselves—every man, woman, and child.

This sort of spirit, or this stubbornness against taking up with new and improved methods, meets us in other things as well as in having accurate time. Every little while I come across people out in the country who are burning *tallow candles*. May be I put it too strongly, but there are at least a few such right here in Medina Co. They prefer the old-fashioned methods. In farming, there is such a thing, I suppose, as going too heavily into new-fangled methods; but, oh dear me! to think of the other extreme that becomes apparent when we see from statistics what the average farm crop is! You may say, "Why, Mr. Root, why not let everybody do as he pleases in a matter of this kind?" In regard to farm crops, folks can do as they please, and I suppose they will do as they please; but in this matter you are wronging your neighbors—wronging people at large. The poor family that was put to the expense of staying at the hotel over Sunday is an illustration; and no one can have a timepiece—it matters not who he is—without setting more or less people wrong who happen to glance at his clock, and that, perhaps, without saying a word. I have been vexed almost beyond endurance by just this very thing. Being in a hurry I have glanced at a clock, not thinking there were two kinds of time. Then I missed the train, or some other important appointment, because of the half-hour's difference.

Now, then, if I have not been fair in this—if I have held up one side and kept out the other, please tell me so, and set me right. If, on the other hand, all I say is true, and yet you stubbornly refuse to go to your clock this minute and set it where it ought to be, as soon as you can, then I shall have to think of you as I do of some other people who know perfectly well what is right and fair, and yet who stubbornly and deliberately persist in doing that which is wicked and wrong. Even if you have a sundial and an almanac, it is a rather difficult matter to keep your timepieces correct. I do not know how you can keep sun time with any degree of accuracy, even if you set out to do it. I do not know how it is in other places, but in our town the jewelers all keep standard time. One of them told me a few days ago he had pulled off the extra hand he used to have on his regulator, and that in the future he would absolutely refuse to give anybody "sun time," or aid him in any way in his stubbornness. Good for the jeweler!

Even if you decide on sun time, it will trou-

* It would seem as though there should not be very much difficulty about changing the hour a little for dinner, when, among a certain class, the dinner-hour does not mean any time in particular. It may be 12, 1:30, 1, or 1:30, and so on until after dark.

ble you very much to get it exactly. But how is it with standard time? Why, our scientific men can tell you when it is noon to the fractional part of a second.* You will find something on this subject in GLEANINGS for 1891, Nov. 15, page 899. Well, by the aid of our wonderful system of telegraph lines we have clocks in all our cities and towns so perfectly regulated by electricity that the actual *pulsations* are in perfect harmony. The people of Medina are well aware of the fact that there is a beautiful and expensive timepiece on one of our business streets that is never a fraction of a second out of the way, and yet the greater part of them refuse to avail themselves of this wonderful achievement in science and—common sense. Why, I often say, from the bottom of my heart, "May God be praised that our United States of America has at length inaugurated such a perfect, accurate system of uniform time, that may easily be adopted wherever railroads and telegraphs have pushed their way."



GARDENING FOR DECEMBER.

In our issue for Nov. 1, 1892, page 813, I spoke of having four rows of carrots 400 feet long. Well, during the past season we had five rows on the same ground; but the wetness drowned out the lower end so much that there were hardly four good rows. The carrots were sown quite thickly, as before, and the ground is some of our heaviest manured market-garden ground. It is a gravelly loam, and quite a good part of it is right through where Champion Brook used to run before I made a deep straight channel, so as to take the water off from this rich bottom ground. Well, you notice that, last year, I was quite elated because I got 30 bushels of carrots from these four rows. Now take a good big breath to get ready for the announcement I am going to make. Last Saturday, Dec. 16, we dug 110 bushels of carrots on this same ground. At 40 cents a bushel this

*Somebody said last evening, that, as the railroad people were obliged to get their standard time from the sun, after all, what does it amount to, even if the sun is very erratic in its (apparent) movements? But, hold on, my good friends, who are inclined just now to worship the sun. Astronomers, and scientific and railroad men, do not get their time from the sun. They use what is called sidereal, or star time. A star comes to any given meridian every day, owing to the unchanging revolution of the earth, at *exactly* the same instant. That constitutes a sidereal day, or a day having 23 hours 55 minutes and $\frac{1}{1000}$ of a second. This gives an invariable standard of time measure, just as we have a permanent standard yardstick, or standard pound or gallon. See our issue referred to above. Our stenographer, who, by the way, has assisted me quite a little on the astronomical points of this discussion, here suggests that a very considerable portion of the people of the world live north of the 67th parallel of latitude, where the sun at this time of the year does not appear for over 24 hours at a stretch, and where, in June, it does not set for at least 36 hours—"God's time" too; and within the limits of civilization the sun does not appear for weeks. Here the stars are an absolute necessity.

I have been informed that the reason why the laws of the State of Ohio took hold of the matter was, that the question came up in regard to insurance. Sometimes a building takes fire just 15 minutes after the company *claims* the policy has expired. Now, then, were you insured by sun time or standard? and what has the law to say in regard to the matter?

would make about \$1440 per acre, even at the low price of 40 cents a bushel. I have noticed for years that carrots on this ground, if sown quite thickly, would still make a good size, even when they were so close that they crowded each other almost out of the ground, and squeezed each other almost out of shape. But for feeding horses and cattle this does not matter so very much. We have sold 25 bushels at 40 cents; but our horses, and, in fact, all kinds of stock, eat them with such avidity that we do not care very much whether we sell all the others or not. This ground seems to be particularly adapted to carrots. They get down through the loose gravel easily; and the rich bottom land, a good deal of which is mud left from the overflows, seems to furnish fertility. Perhaps you may wonder why we waited till the middle of December before we harvested them. Well, they were growing so beautifully that I hadn't the heart to pull them up; and, in fact, they did not do much if any thing until the late rains came; and the first thing I knew, December came down upon us with its frosts and snows. We tried to get at them Thanksgiving day; but nobody wanted to work; and the next time when the weather was really fit was the day I have mentioned. We pulled a lot of turnips the same day. They were not hurt at all, or very few of them were, and the rest of them seemed to be really better for the frosting they got. We pulled them, tops and all, and piled them in potato-boxes. Then a stout team with a low sled went right past the boxes, setting from 16 to 20 on the sled. Of course, this is not very much of a load; but the team needed exercise, and it saved the men a great deal of heavy lifting.

When they commenced on the carrots I asked them if they were sure there were 25 bushels to fill the order. The man who drove the team told me there would be over 50. Then he said there would be 75. But the more they pulled, the more there seemed to be in the ground. Pretty soon he announced there were over 100; and you may be sure I had one of my happy surprises when they announced that they had covered up in the toolhouse over 140 bushels, tops and all. After the tops were taken off, we had just about 110 bushels of carrots.

Well, there was some other work we did on that warm Saturday. There were two lots of celery outdoors. These were deeply banked up, it is true; in fact, the earth had been gradually thrown up around them until only a little bit of the tops was above the ground. The Weather Bureau notified us that a cold wave would set in Saturday night, and the last of the celery was dug during a pretty severe snowstorm. As the tops were all frozen and black, I took a sickle and thrust it under the earth so as to slice off the black dead frozen tops. I did not want these carried into the cellar, because they would cause the rest of it to rot. The celery was then dug, and packed in potato-boxes, as I have before mentioned. The quality is pretty fair; but cutting off all the frozen portions leaves it in rather untidy shape, and it has to be sold at 5 cents per lb., while we get 10 cents for the best. The reason why the celery was left out so long was the same as with the carrots. It was growing so beautifully, and the weather was so fine, that I could not bear to disturb it. Generally it will do very well to leave carrots until an open spell in December, as they do not seem to be hurt a particle; but with turnips it is rather risky, as I have sometimes had them injured, even as early as the first of December; and in our locality I think celery should be fixed up for winter before Thanksgiving.

I am greatly pleased with our plan of pack-

ing celery just as it is taken up, in the potato-boxes. Set these boxes tight up together, right on the earth bottom of a damp dark cellar, and it will bleach out about as nicely as in any way you can fix it. The slatted potato-boxes give ventilation enough to prevent heating and rotting, and yet not so much as to injure it by wilting—that is, if your cellar is damp and dark.

EGYPTIAN (OR WINTER) ONIONS UNDER GLASS.

Friend Root:—I have received valuable information from articles under "High-pressure Gardening," and believe, there are times when perhaps even my experience would be of some benefit to others. As you said in last GLEANINGS, Nov. 15, the bottom onions of the Egyptian (or winter) onion variety, are excellent for putting into hot-beds. Of this work I now wish to speak, and have just been in the field with our helpers taking those *bottoms* up, to set in our hot-beds later on. To do this we use a subsoil-plow, which is held by experienced hands close to the row, which loosens every onion. We take hold of the onions and lay them side by side, the entire length of the row. The next row is laid in the same way, but the tops in one row face east, in the other they face west. The roots in each row are just touching. When we have thus pulled up four or five rows on either side of our row of onions, then we commence pulling, and lay the onions on a board 12 inches wide, with a strip 1 x 4 nailed on one edge, 12 ft. long. The roots are placed next to this strip.

I will just say here, these are the same boards we use in spring in conveying our onions from the field to our round house, where they are cleaned. We put two of these boards on a wagon (which has had the bed laid off); then a crosspiece is put on top of the 4-inch strips, and on these are placed two more boards full of onions, and these make a wagonload. When they are brought to the onion-house the boards are lifted, onions and all, over the low wheels (wagon), and thus carried and *turned over* all at once, thus leaving them straight and even, and without handling or mutilating the tops, which is quite necessary to preserve their good appearance on market. We will turn them on the floor (the first two boards full), then place a small box, about 10 x 12 inches, at each end of the onions thus dumped, and on these boxes is laid a 2 x 12-inch plank, about 2 ft. longer than the onion-boards, and on this plank are laid two more trays of onions, and so on, making the tier as high as four feet or more; and we usually have four or five tiers, so that, in case of bad weather, we shall have enough onions on hand on the morrow to keep the onion-strippers busy; and unless we have them separated as described, they will become heated; and not only that, the onion-tops next to the floor will be flattened by reason of such pressure, and badly bruised.

I have taken some time to tell of the use we make of these boards; but those who are growing onions on an extensive scale will find them invaluable.

To go back to the field, now, as I have said, we use these same boards; fill a board full; two men work with each board, then carry it over to the row of onions and turn them over on that, just as we did in the onion-house. We thus put 32 rows in one full length of field. When completed you will see only onion-tops, excepting the last boardful, along as the binder. The whole is now covered over with coarse litter, but not so as to heat them. The object of this is, of course, to have your onions so you can get at them when wanted for hot-bed use, in January or before, at which time the ground is usually frozen so as to render the getting of

your onions out of the field otherwise impossible.

Now that we have the onions ready for the hot-beds, our next thought will be the *condition* of the hot-beds, which must not be *hot*. When the soil is too warm, it causes the onions to grow too fast and *stirn*. Not having time to gather nourishment from the soil, it simply *lengthens out*, and that is not altogether desirable.

Our lettuce is now ready to be transplanted into the hot-beds; and by the time it is taken from them, I believe the beds will be in better condition for receiving the onions than at any other period. The onion which is put into a hot-bed should be of good size, and grown from large sets, on rich soil, and must have *room* in the field. Remember, the onion does not get *fat*, as we call it, in the hot-bed. You put a small onion in the bed, and it will always be small.

We dig a ditch about four inches deep across the bed, and set onions in it, side and side, as close as convenient, full length, then cover and straighten up by using a lath the same length of row. Then make another ditch as before, and so on until completed. I have experimented by cutting the tops or leaves all off, which makes them look much nicer about a week or two afterward, and have also trimmed the roots all off but about one inch; but when we marketed the onions we could see but little if any difference, and hereafter we shall do no trimming at all. I have marketed onions 27 days after being first put into hot-beds. This year, being so dry, our onions did not start to grow until very late; and the result is *very* small onions to put into hot-beds. We shall only be compelled to put more in a bunch when time to market.

Now, Mr. Root, this may be too long for your use; but you have it any way, and I think it is now your turn to take the stand and give me some information about onions.

Last spring I set out nearly one acre of White Victoria and Prizetaker, according to the "Greiner" system; but I set some of them out late, and we did not have a rain to do any good until very late this fall. I think nearly half of the onions lived anyhow, regardless of the drouth. The most of them made small bottoms; and after the fall rains my onions commenced to grow, and to-day it's a field of *green* onions; and now how shall I manage to get the most good out of them? or can I do any thing with them? I have thought of letting them remain where they are until spring, and see if they would not come on and make green bunch onions; or would they winter-kill though covered with coarse manure? I have also thought of taking them up at once and putting them into hot beds, and sell green bunches in that way. If you know that would be a success, please drop a card to that effect at once, so they can be taken up before the ground freezes. These same varieties which I set out in time to get the benefit of early rains made a large and profitable crop, and I shall continue to grow them that way.

I also want to get hold of some of those "chives" when you find more than you want, as well as potato onions.

I hope your call, "What do *you* know about onions?" will awaken some of the onion-growers to relate their experience, especially in forcing the onion, as it is now time that we should know whether you keep your onions, intended to force, from freezing, or in the frozen state. Do you keep them in the cellar or in pits? Do you put them into the hot-beds while frozen, or how do you manage them?

Kankakee, Ill.

C. W. POTTENGER.

[Friend P., we are greatly obliged to you indeed. It certainly does make a vast difference in your bunch onions in regard to the appearance of the tops, and your boards are just the thing to keep every thing orderly and systematic. If a lot of onions are dumped into a basket, and then pulled out one at a time, the tops would be dragged and untidy; and, besides, one can work ever so much faster where things are arranged in a methodical way, as you mention. We have had experience with the White Victoria and Prizetaker, in just the way you mention. I have tried transplanting them to

the greenhouse; but some seasons we get just as nice onions, or perhaps nicer, by leaving them outdoors. Of course, we can not have them so early as where they are put into a greenhouse or cold hot-bed, such as you describe. And, again, where they are left outside, too much freezing and thawing sometimes injures them greatly. Our onions for forcing, we usually take up before they have been frozen and thawed very much, and put them into the cellar. I have never tried pits, but very likely they would do better. We sometimes put them into hot-beds while frozen, but they seldom do as well.]

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